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UNITED STATES DEPARTMENT OF COMMERCE

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WEATHER BUREAU

F. W. Reichelderfer, *Chief*

MONTHLY WEATHER REVIEW

OCTOBER 1947

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CORRECTION

MONTHLY WEATHER REVIEW, June 1947, Vol. 75, No. 6, p. 107. In table of *Climatological Data for June 1947*, under heading "Middle Pacific Coast," the temperature departure from normal for Red Bluff, Calif., should read -4°F , instead of 4°F .

MONTHLY WEATHER REPORT

Acting Editor, Robert N. Culnan

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OCTOBER 1947

CLOSED DECEMBER 5, 1947
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METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR OCTOBER 1947

AEROLOGICAL OBSERVATIONS

[For description of change in Table 1 and charts, see REVIEW, January 1948, p. 6]

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during October 1947

STATIONS AND MEAN SURFACE PRESSURES

Standard pressure surface (mb.)	Albany, N. Y. (1,006.9 mb.)				Albuquerque, N. Mex. (838.0 mb.)				Apalachicola, Fla. (1,015.5 mb.)				Atlanta, Ga. (983.6 mb.)				Auburn, Calif. (956.7 mb.)				Big Spring, Tex. (926.3 mb.)				Bismarck, N. Dak. (933.1 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface.....	31	86	11.5	77	31	1,620	17.4	32	31	5	21.9	86	31	300	18.0	82	31	501	14.6	69	31	774	21.4	50	31	505	10.1	70
1,000.....	31	167	12.8	73	31	75	(*)	---	31	139	21.8	82	31	157	(*)	---	31	123	(*)	---	31	102	(*)	(*)	31	99	(*)	---
950.....	31	606	13.2	64	31	534	(*)	---	31	585	19.4	76	31	601	18.3	75	31	562	15.5	67	31	556	(*)	---	31	534	8.7	67
900.....	31	1,053	10.6	66	31	1,009	(*)	---	31	1,047	16.6	74	31	1,061	15.5	76	31	1,019	14.4	54	31	1,024	21.8	48	31	983	11.4	55
850.....	31	1,528	8.0	66	31	1,497	(*)	---	31	1,532	14.0	69	31	1,544	12.5	75	31	1,499	11.5	50	31	1,518	18.7	50	31	1,459	9.7	53
800.....	31	2,027	6.6	53	31	2,015	15.9	31	31	2,041	11.1	65	31	2,051	9.6	69	31	2,003	8.5	46	31	2,035	14.8	50	31	1,961	7.8	48
750.....	31	2,559	4.1	49	31	2,562	11.7	36	31	2,584	8.2	57	31	2,591	7.0	61	31	2,539	5.5	44	31	2,581	10.9	49	31	2,495	5.7	47
700.....	31	3,113	1.0	48	31	3,131	7.1	42	31	3,144	5.2	52	31	3,149	4.3	52	31	3,095	2.4	44	31	3,151	7.3	38	31	3,053	2.8	49
650.....	31	3,712	-1.9	44	31	3,739	2.3	44	31	3,751	1.9	46	31	3,753	0.7	48	31	3,693	-1.4	42	31	3,700	3.2	37	31	3,651	-1.0	49
600.....	31	4,338	-5.3	37	31	4,376	-2.3	43	31	4,388	-1.6	45	31	4,388	-2.8	40	31	4,327	-3.8	41	31	4,401	-1.1	32	31	4,283	-5.0	48
550.....	31	5,019	-9.5	34	31	5,061	-7.1	46	31	5,077	-5.5	36	31	5,073	-6.9	33	31	5,008	-7.8	42	31	5,088	-5.4	---	29	4,963	-9.4	46
500.....	31	5,745	-14.3	---	31	5,798	-11.7	41	31	5,817	-10.2	---	31	5,809	-11.8	---	31	5,745	-12.2	44	31	5,831	-10.1	---	29	5,692	-14.5	46
450.....	31	6,544	-20.1	---	31	6,606	-17.3	42	31	6,627	-15.6	---	31	6,614	-17.1	---	31	6,550	-17.8	46	31	6,644	-15.6	---	29	6,496	-20.0	46
400.....	31	7,399	-25.8	---	31	7,470	-23.5	---	29	7,495	-22.0	---	31	7,482	-23.5	---	31	7,412	-24.3	54	31	7,515	-21.9	---	29	7,345	-26.2	---
350.....	31	8,348	-34.2	---	31	8,432	-30.7	---	29	8,464	-28.8	---	31	8,444	-31.0	---	31	8,370	-31.6	50	31	8,483	-29.3	---	29	8,295	-33.4	---
300.....	31	9,408	-42.4	---	31	9,508	-39.0	---	29	9,550	-36.5	---	30	9,521	-39.3	---	30	9,441	-39.6	---	31	9,565	-37.6	---	27	9,364	-41.6	---
250.....	30	10,616	-51.2	---	30	10,731	-47.6	---	29	10,789	-44.9	---	29	10,748	-47.9	---	30	10,663	-48.7	---	30	10,798	-46.4	---	29	10,574	-50.5	---
200.....	26	12,066	-57.9	---	30	12,180	-54.6	---	28	12,251	-53.8	---	29	12,198	-55.0	---	26	12,109	-56.7	---	29	12,253	-54.1	---	29	12,009	-57.2	---
175.....	17	21,895	-59.1	---	28	13,036	-57.6	---	26	13,105	-58.8	---	25	13,040	-58.3	---	27	12,966	-59.8	---	28	13,096	-58.0	---	---	---	---	---
150.....	12	13,858	-59.4	---	22	14,011	-60.7	---	25	14,061	-63.9	---	18	14,002	-61.9	---	15	13,875	-61.0	---	25	14,053	-61.3	---	---	---	---	---
125.....	---	---	---	---	8	15,147	-63.0	---	12	15,190	-67.3	---	12	15,117	-65.1	---	---	---	---	---	15	15,188	-65.2	---	---	---	---	---

Standard pressure surface (mb.)	Boise, Idaho (914.0 mb.)				Brownsville, Tex. (1,013.1 mb.)				Buffalo, N. Y. (993.9 mb.)				Caribou, Maine (994.6 mb.)				Charleston, S. C. (1,015.9 mb.)				Ciudad Victoria, Mexico (974.6 mb.)				Columbia, Mo. (988.3 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface.....	31	868	13.1	58	31	6	24.3	82	31	221	13.1	74	31	191	7.3	77	31	13	19.3	91	29	335	24.8	76	31	239	17.7	70
1,000.....	31	100	(*)	---	31	120	24.6	79	31	169	(*)	---	31	145	(*)	---	31	149	20.3	85	29	106	(*)	---	31	136	(*)	---
950.....	31	545	(*)	---	31	575	21.9	75	31	605	14.6	62	31	572	8.7	67	31	594	18.4	78	29	560	23.5	74	31	582	18.7	62
900.....	31	998	14.8	47	31	1,038	19.4	64	31	1,058	12.2	60	31	1,016	6.7	67	31	1,054	15.6	76	29	1,030	20.1	70	31	1,041	16.3	61
850.....	31	1,480	12.1	46	31	1,529	17.1	55	31	1,535	10.1	53	31	1,483	4.2	65	31	1,538	12.7	74	29	1,521	16.7	77	31	1,526	13.7	60
800.....	31	1,984	8.5	50	31	2,044	14.7	44	31	2,037	8.0	46	31	1,974	2.1	59	31	2,045	10.1	68	29	2,036	13.8	73	31	2,035	11.3	51
750.....	31	2,517	4.8	56	31	2,594	11.9	41	31	2,572	5.5	44	31	2,498	-2.5	58	31	2,584	7.6	61	29	2,584	10.9	66	31	2,575	8.4	47
700.....	31	3,073	1.9	63	31	3,161	8.1	46	31	3,128	2.8	39	31	3,045	-2.1	53	31	3,146	4.4	54	29	3,151	7.9	61	31	3,138	4.9	44
650.....	31	3,666	-2.9	62	31	3,775	4.5	43	31	3,728	-6	39	31	3,633	-5.3	46	31	3,746	1.1	47	29	3,762	4.1	64	30	3,745	1.6	39
600.....	31	4,296	-6.5	63	31	4,417	1.0	34	31	4,359	-4.5	35	31	4,256	-8.8	44	30	4,386	-2.3	43	29	4,406	-2	61	30	4,382	-2.3	38
550.....	31	4,970	-10.2	57	31	5,113	-3.0	---	30	5,040	-8.5	---	31	4,924	-12.9	42	30	5,070	-6.6	45	29	5,102	-3.1	52	30	5,067	-6.9	29
500.....	30	5,702	-14.3	52	30	5,861	-7.6	---	30	5,770	-13.4	---	31	5,644	-17.5	---	30	5,811	-11.4	---	28	5,847	-7.6	43	30	5,804	-11.7	38
450.....	30	6,496	-19.8	58	30	6,686	-12.7	---	30	6,573	-19.2	---	31	6,431	-22.3	---	29	6,621	-17.1	---	27	6,670	-13.0	---	30	6,612	-17.4	---
400.....	30	7,357	-26.0	---	30	7,561	-18.9	---	30	7,428	-25.9	---	28	7,276	-28.4	---	29	7,459	-23.2	---	27	7,540	-18.5	---	29	7,471	-24.1	---
350.....	30	8,308	-33.4	---	30	8,543	-25.3	---	28	8,378	-33.6	---	27	8,226	-35.4	---	29	8,453	-30.4	---	24	8,534	-25.4	---	29	8,430	-31.6	---
300.....	30	9,372	-41.6	---	30	9,643	-33.2	---	27	9,440	-42.0	---	27	9,278	-43.0	---	28	9,528	-38.5	---	24	9,634	-35.6	---	29	9,502	-40.0	---
250.....	30	10,583	-50.7	---	30	10,899	-42.6	---	26	10,659	-50.7	---	26	10,491	-50.2	---	28	10,755	-47.6	---	24	10,887	-43.5	---	29	10,722	-48.7	---
200.....	26	12,029	-57.6	---	30	12,370	-53.3	---	23	12,079	-58.0	---	19	11,930	-55.4	---	20	12,210	-55.0	---	22	12,354	-55.1	---	26	12,190	-55.2	---
175.....	18	12,894	-58.9	---	29	13,213	-59.3	---	17	12,921	-60.4	---	10	12,786	-64.1	---	10	13,076	-58.2	---	15	13,178	-61.9	---	20	12,996	-57.0	---
150.....	5	13,930	-62.5	---	29	14,166	-65.3	---	6	13,872	-61.4	---	5	13,758	-55.1	---	7	14,029	-62.4	---	9	14,132	-68.6	---	19	13,961	-69.8	---
125.....	---	---	---	---	13	15,286	-70.9	---	---	---	---	---	---	---	---	---	---	---	---	---	10	15,100	-62.2	---	---	---	---	---

See footnotes at end of table.

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TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during October 1947—Continued

Standard pressure surface (mb.)	Dodge City, Kans. (924.1 mb.)				El Paso, Tex. (880.8 mb.)				Ely, Nev. (808.5 mb.)				Fort Worth, Tex. (990.3 mb.)				Glasgow, Mont. (936.1 mb.)				Grand Junction, Colo. (832.5 mb.)				Great Falls, Mont. (884.0 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface.....	31	787	17.4	53	30	1,195	20.5	27	31	1,908	9.5	51	31	211	22.4	64	31	648	10.4	60	31	1,474	13.4	57	31	1,128	10.4	53
1,000.....	31	102	(*)	---	30	78	(*)	---	31	96	(*)	---	31	125	(*)	---	31	90	(*)	---	31	101	(*)	---	31	84	(*)	---
950.....	31	549	(*)	---	30	539	(*)	---	31	543	(*)	---	31	580	22.8	56	31	527	(*)	---	31	553	(*)	---	31	529	(*)	---
900.....	31	1,013	18.8	50	30	1,013	(*)	---	31	1,005	(*)	---	31	1,043	19.6	57	31	976	12.8	49	31	1,015	(*)	---	31	984	(*)	---
850.....	31	1,502	16.1	50	30	1,504	21.2	26	31	1,487	(*)	---	31	1,333	15.8	60	31	1,454	10.2	49	31	1,498	(*)	---	31	1,454	10.1	50
800.....	31	2,015	13.2	49	30	2,024	17.0	27	31	1,997	11.5	48	31	2,045	12.5	58	31	1,956	7.4	51	31	2,010	12.3	50	31	1,955	6.8	51
750.....	31	2,557	9.8	47	30	2,574	12.5	31	31	2,536	8.7	46	31	2,592	9.1	53	31	2,488	4.7	48	31	2,552	8.5	52	31	2,488	3.9	53
700.....	31	3,124	5.6	48	30	3,143	7.9	36	31	3,100	4.2	50	31	3,152	6.1	39	31	3,044	1.5	49	31	3,114	4.2	56	31	3,040	0.6	51
650.....	31	3,727	1.0	49	30	3,752	3.5	36	31	3,698	---	53	31	3,758	2.2	32	31	3,641	---	52	31	3,715	---	57	31	3,636	---	50
600.....	30	4,367	-3.3	42	30	4,394	-1.1	34	31	4,335	-4.1	53	31	4,398	-1.5	---	30	4,272	-5.5	53	31	4,349	-4.5	56	31	4,261	-6.7	49
550.....	30	5,050	-7.5	37	30	5,083	-5.5	---	31	5,015	-7.7	48	31	5,087	-6.0	---	30	4,949	-9.8	48	31	5,031	-9.0	55	31	4,938	-11.0	41
500.....	30	5,786	-12.6	---	30	5,823	-10.6	---	31	5,753	-11.9	40	31	5,825	-11.1	---	30	5,679	-14.5	47	31	5,761	-13.6	51	31	5,660	-15.9	46
450.....	30	6,584	-18.4	---	30	6,630	-16.3	---	30	6,557	-17.6	41	31	6,637	-16.9	---	30	6,475	-20.0	47	31	6,560	-19.3	48	31	6,453	-21.6	---
400.....	30	7,449	-24.9	---	29	7,497	-23.2	---	30	7,422	-24.4	---	31	7,501	-23.4	---	29	7,335	-25.9	---	31	7,418	-25.7	---	31	7,303	-27.8	---
350.....	30	8,406	-31.8	---	28	8,459	-30.8	---	30	8,381	-31.9	---	31	8,463	-31.1	---	28	8,292	-32.7	---	29	8,375	-32.9	---	31	8,248	-35.0	---
300.....	30	9,478	-39.7	---	28	9,532	-39.4	---	29	9,449	-40.2	---	31	9,536	-39.6	---	27	9,364	-40.8	---	29	9,440	-41.3	---	31	9,305	-43.0	---
250.....	28	10,705	-48.3	---	24	10,765	-48.5	---	26	10,673	-48.8	---	31	10,759	-48.3	---	26	10,577	-49.2	---	25	10,656	-49.3	---	30	10,516	-50.8	---
200.....	22	12,170	-55.0	---	22	12,214	-56.4	---	22	12,094	-56.0	---	31	12,202	-56.0	---	25	12,013	-55.1	---	14	12,054	-54.8	---	24	11,972	-56.9	---
175.....	12	12,984	-56.8	---	21	13,056	-60.1	---	20	12,954	-58.6	---	27	13,049	-59.6	---	22	12,859	-56.1	---	6	12,893	-54.0	---	19	12,833	-58.1	---
150.....	8	13,950	-58.6	---	16	14,021	-64.5	---	13	13,893	-60.2	---	19	13,995	-63.8	---	16	13,829	-56.0	---	---	---	---	---	10	13,804	-59.4	---
125.....	---	---	---	---	7	15,132	-69.0	---	5	15,022	-62.3	---	10	15,118	-67.5	---	9	14,971	-57.2	---	---	---	---	---	---	---	---	---

Standard pressure surface (mb.)	Greensboro, N. C. (988.6 mb.)				Hatteras, N. C. (1,018.5 mb.)				Havana, Cuba (---- mb.)				Honolulu, T. H. (1,015.3 mb.)				Huntington, W. Va. (999.0 mb.)				International Falls, Minn. (973.4 mb.)				Joliet, Ill. (996.6 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface.....	31	273	15.0	87	31	3	20.4	86	---	---	---	---	31	3	27.3	63	31	172	14.3	83	31	360	9.9	73	31	178	14.0	81
1,000.....	31	175	(*)	---	31	161	20.3	79	---	---	---	---	31	138	25.9	65	31	163	(*)	---	31	133	(*)	---	31	148	(*)	---
950.....	31	614	15.9	76	31	608	17.7	74	---	---	---	---	31	589	22.1	71	31	607	16.8	65	31	560	10.9	66	31	590	16.5	68
900.....	31	1,071	13.7	75	31	1,064	15.0	69	---	---	---	---	31	1,056	18.5	76	31	1,060	14.1	64	31	1,013	9.7	63	31	1,045	14.1	63
850.....	31	1,551	11.0	73	31	1,547	12.4	65	---	---	---	---	31	1,544	15.8	67	31	1,541	11.2	65	31	1,486	8.4	54	31	1,526	12.4	52
800.....	31	2,055	8.3	65	31	2,053	9.8	59	---	---	---	---	31	2,058	14.2	47	31	2,044	8.3	65	31	1,986	6.6	49	31	2,032	9.8	52
750.....	31	2,592	5.3	61	31	2,591	7.6	46	---	---	---	---	31	2,603	12.5	32	31	2,579	5.6	63	31	2,518	4.7	47	31	2,568	6.8	52
700.....	31	3,147	2.7	54	31	3,152	4.4	43	---	---	---	---	30	3,178	9.6	26	31	3,137	2.5	61	31	3,075	2.3	44	31	3,129	3.7	48
650.....	31	3,744	---	52	31	3,749	---	42	---	---	---	---	30	3,791	6.0	---	31	3,735	---	59	31	3,667	---	44	31	3,731	---	43
600.....	31	4,379	-4.3	50	31	4,388	-3.0	42	---	---	---	---	30	4,439	2.1	---	31	4,368	-4.3	58	31	4,303	-5.1	48	31	4,365	-3.5	37
550.....	31	5,061	-8.2	45	31	5,072	-6.9	---	---	---	---	---	30	5,138	-2.2	---	31	5,048	-8.4	50	30	4,978	-9.3	46	31	5,048	-7.9	41
500.....	31	5,794	-13.0	43	31	5,809	-11.6	---	---	---	---	---	30	5,886	-7.1	---	31	5,782	-13.4	42	30	5,712	-14.1	43	31	5,781	-12.9	---
450.....	31	6,597	-18.4	---	31	6,618	-17.3	---	---	---	---	---	30	6,709	-12.6	---	31	6,580	-19.1	43	28	6,508	-19.5	47	31	6,583	-18.5	---
400.....	31	7,459	-25.0	---	31	7,482	-23.3	---	---	---	---	---	30	7,590	-18.6	---	30	7,438	-25.6	---	28	7,369	-26.0	---	31	7,445	-24.9	---
350.....	31	8,415	-32.5	---	30	8,442	-30.7	---	---	---	---	---	29	8,572	-25.9	---	30	8,392	-33.2	---	27	8,322	-33.2	---	31	8,401	-32.1	---
300.....	30	9,484	-40.8	---	30	9,516	-39.1	---	---	---	---	---	29	9,669	-34.3	---	29	9,463	-41.4	---	26	9,382	-41.5	---	29	9,495	-40.1	---
250.....	28	10,702	-49.8	---	30	10,740	-48.3	---	---	---	---	---	27	10,921	-43.3	---	29	10,676	-50.5	---	25	10,591	-50.7	---	25	10,715	-49.1	---
200.....	23	12,131	-56.7	---	23	12,176	-55.7	---	---	---	---	---	26	12,391	-53.3	---	27	12,105	-57.3	---	21	12,024	-57.1	---	22	12,155	-57.4	---
175.....	18	12,972	-59.3	---	15	13,015	-58.4	---	---	---	---	---	23	13,240	-58.6	---	26	12,949	-59.5	---	17	12,858	-58.5	---	19	13,006	-59.1	---
150.....	10	13,917	-62.6	---	8	13,992	-61.1	---	---	---	---	---	15	14,214	-62.7	---	23	13,905	-61.7	---	6	13,807	-57.7	---	13	13,951	-60.3	---
125.....	---	---	---	---	---	---	---	---	---	---	---	---	7	15,309	-66.0	---	10	15,005	-63.9	---	---	---	---	---	7	15,035	-63.0	---

Standard pressure surface (mb.)	Lake Charles, La. (1,015.0 mb.)				Lander, Wyo. (829.3 mb.)				Las Vegas, Nev. (945.5 mb.)				Little Rock, Ark. (1,006.9 mb.)				Mazatlan, Mexico (1,007.4 mb.)				Medford, Oreg. (967.0 mb.)				Merida, Mexico (1,009.2 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface.....	31	5	21.6	82	31	1,696	10.2	53	30	574	21.2	33	31	79	18.0	83	31	14	28.2	74	31	401	14.2	70	28	27	26.0	81
1,000.....	31	135	23.4	76	31	91	(*)	---	30	82	(*)	---	31	138	19.5	78	31	80	27.5	73	31	115	(*)	---	28	td		

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during October 1947—Continued

Standard pressure surface (mb.)	Miami, Fla. (1,014.3 mb.)				Nantucket, Mass. (1,019.0 mb.)				Nashville, Tenn. (996.6 mb.)				New Orleans, La. (1,015.5 mb.)				North Platte, Nebr. (916.2 mb.)				Oakland, Calif. (1,014.4 mb.)				Ogden, Utah (863.9 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity				
Surface.....	31	4	24.2	84	31	14	12.3	88	30	180	18.8	74	31	2	22.7	82	31	849	13.1	68	30	6	16.6	76	31	1,355	12.1	
1,000.....	31	128	23.9	83	31	172	13.8	80	30	150	(*)	76	31	136	23.2	76	31	99	(*)	76	30	128	16.1	75	31	103	(*)	
950.....	31	579	21.1	83	31	609	12.9	80	30	594	18.4	68	31	585	20.3	70	31	544	(*)	70	30	570	14.7	69	31	552	(*)	
900.....	31	1,043	18.3	78	31	1,058	11.3	48	30	1,054	15.3	70	31	1,048	17.3	71	31	999	16.4	58	30	1,021	13.0	55	31	1,014	(*)	
850.....	31	1,532	15.3	78	31	1,533	9.3	41	30	1,537	12.5	67	31	1,534	13.9	70	31	1,485	14.6	53	30	1,501	12.1	44	31	1,491	13.8	
800.....	31	2,044	12.4	75	31	2,034	7.3	41	30	2,043	9.6	64	31	2,043	11.1	61	31	1,995	11.6	54	30	2,006	9.8	40	31	2,000	10.8	
750.....	31	2,584	9.5	68	31	2,567	5.2	34	30	2,579	6.7	62	31	2,583	8.7	52	31	2,536	8.1	55	30	2,547	7.1	39	31	2,539	6.8	
700.....	31	3,153	6.5	60	31	3,123	2.2	34	30	3,141	3.6	89	31	3,147	5.8	42	31	3,098	4.6	51	30	3,105	4.4	41	31	3,097	2.8	
650.....	31	3,756	3.1	61	30	3,719	-9	34	29	3,743	2	54	31	3,750	2.2	42	31	3,701	1.4	49	30	3,707	1.4	38	31	3,696	-1.1	
600.....	30	4,403	-3	55	30	4,351	-4.6	28	28	4,378	-3.3	45	30	4,393	-1.4	31	4,335	-4.0	50	30	4,346	-2.1	38	31	4,327	-5.2		
550.....	29	5,093	-4.0	51	30	5,029	-8.8	27	27	5,066	-7.1	29	30	5,079	-5.5	30	5,016	-8.6	48	30	5,033	-6.3	43	31	5,009	-9.5		
500.....	29	5,842	-8.3	50	30	5,761	-13.9	27	27	5,802	-11.7	27	30	5,823	-10.2	30	5,745	-13.7	49	30	5,772	-10.9	45	31	5,736	-14.1		
450.....	29	6,659	-13.4	45	29	6,568	-19.5	26	26	6,607	-17.4	26	30	6,638	-15.7	30	6,544	-19.5	45	30	6,585	-16.2	49	31	6,535	-19.8		
400.....	29	7,540	-19.3	57	29	7,423	-26.1	25	25	7,474	-23.8	25	29	7,507	-22.1	30	7,401	-26.3	43	30	7,451	-22.6	31	7,391	-26.0			
350.....	29	8,519	-26.0	29	8,375	-33.5	24	24	8,438	-31.1	24	29	8,475	-28.8	30	8,352	-33.4	29	8,419	-29.8	31	8,406	-41.7	31	8,342	-33.6		
300.....	28	9,614	-34.4	27	9,447	-41.2	24	24	9,512	-39.2	24	29	9,561	-36.5	30	9,416	-40.9	28	9,497	-38.1	31	9,406	-41.7	31	9,342	-33.6		
250.....	25	10,866	-43.7	23	10,652	-50.5	23	23	10,732	-46.6	23	28	10,801	-45.3	30	10,632	-49.5	25	10,725	-47.2	31	10,618	-50.2	31	10,618	-50.2		
200.....	17	12,330	-54.0	17	12,088	-58.7	22	22	12,170	-55.9	24	24	12,257	-60.0	30	12,071	-55.8	29	12,924	-57.5	28	12,901	-58.5	28	12,901	-58.5		
175.....	10	13,155	-59.9				22	22	13,012	-58.6	17	17	13,107	-60.0	29	13,257	-60.0	29	13,257	-60.0	27	13,904	-60.6	16	15,067	-64.2		
150.....							15	15	13,980	-61.4	13	13	14,051	-65.0	27	13,904	-60.6	16	15,067	-64.2	16	15,014	-63.1	16	15,014	-63.1		
125.....							7	7	15,069	-62.5	7	7	15,131	-69.0	7	15,131	-69.0	7	16,451	-66.2	7			7				
100.....																												

Standard pressure surface (mb.)	Oklahoma City, Okla. (969.3 mb.)				Omaha, Nebr. (978.6 mb.)				Phoenix, Ariz. (971.5 mb.)				Pittsburgh, Pa. (975.5 mb.)				Portland, Maine (1,016.8 mb.)				Rapid City, S. Dak. (901.1 mb.)				St. Cloud, Minn. (977.2 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity				
Surface.....	30	391	19.6	69	30	308	17.5	68	31	339	22.5	40	31	382	15.4	66	31	990	10.8	61	31	317	12.7	71				
1,000.....	30	118	(*)		30	120	(*)		31	84	(*)		31	169	(*)		31	91	(*)		31	120	(*)					
950.....	30	567	21.3	61	30	563	18.1	61	31	539	25.9	29	31	614	15.6	63	31	596	13.0	54	31	561	13.5	52				
900.....	30	1,032	18.9	61	30	1,022	16.5	57	31	1,008	22.4	29	31	1,065	14.2	61	31	1,044	10.8	56	31	1,007	12.0	60				
850.....	30	1,520	15.3	64	30	1,508	14.1	54	31	1,501	18.3	32	31	1,545	11.2	60	31	1,518	8.0	57	31	1,486	11.0	55				
800.....	30	2,031	11.9	61	30	2,017	11.4	54	31	2,017	14.1	37	31	2,049	8.6	54	31	2,017	6.2	56	31	1,978	10.3	48				
750.....	30	2,572	9.1	50	30	2,557	8.1	54	31	2,561	10.1	40	31	2,589	5.6	52	31	2,548	3.9	50	31	2,519	7.5	47				
700.....	30	3,137	5.5	46	30	3,120	4.5	51	31	3,127	6.4	41	31	3,141	2.8	44	31	3,101	1.9	47	31	3,077	4.1	49				
650.....	30	3,739	1.7	41	30	3,721	0.7	51	31	3,735	2.9	36	31	3,745	-4	43	31	3,695	-2.3	47	31	3,679	0.5	48				
600.....	30	4,380	-2.1	36	30	4,358	-3.6	47	31	4,375	-1.2	31	31	4,374	-4.0	38	30	4,326	-5.9	44	31	4,314	-3.8	50				
550.....	30	5,065	-6.8	37	29	5,046	-8.2	44	31	5,064	-5.7	32	31	5,061	-8.1	30	30	5,001	-10.0	40	31	4,907	-8.5	51				
500.....	30	5,802	-11.9	37	28	5,780	-13.4	31	31	5,804	-10.9	34	31	5,788	-13.0	30	30	5,731	-14.7	38	31	5,727	-13.6	46				
450.....	30	6,605	-17.5	28	28	6,581	-19.0	31	31	6,612	-17.0	36	31	6,593	-18.8	30	30	6,525	-20.2	27	27	6,524	-19.5	43				
400.....	29	7,471	-23.8	28	28	7,439	-25.8	31	31	7,478	-23.9	40	31	7,450	-25.4	29	29	7,378	-26.9	27	27	7,384	-25.7	28				
350.....	27	8,444	-30.7	28	28	8,393	-33.0	31	31	8,438	-31.3	30	31	8,403	-32.9	29	29	8,326	-34.3	27	27	8,356	-32.4	28				
300.....	25	9,521	-39.1	28	28	9,459	-41.1	31	31	9,511	-39.7	30	30	9,476	-41.0	28	28	9,379	-42.9	27	27	9,403	-40.6	28				
250.....	25	10,746	-48.0	28	28	10,674	-49.9	31	31	10,734	-48.3	30	30	10,692	-49.2	27	27	10,583	-51.4	24	24	10,646	-49.5	27				
200.....	24	12,197	-55.2	25	25	12,113	-56.8	30	30	12,176	-55.8	29	29	12,128	-56.6	26	26	12,007	-57.3	20	20	12,044	-55.4	21				
175.....	24	13,042	-58.2	17	17	12,951	-58.2	27	27	13,019	-59.1	26	26	12,975	-59.2	21	21	12,847	-59.3	15	15	12,885	-58.6	18				
150.....	23	14,008	-61.2	14	14	13,917	-60.6	10	10	13,986	-61.6	19	19	13,921	-61.4	13	13	13,831	-59.8	7	7	13,838	-57.6	10				
125.....	15	15,122	-64.8																									
100.....	5	16,452	-65.8																									

Standard pressure surface (mb.)	San Antonio, Tex. (986.3 mb.)				San Juan, P. R. (1,011.7 mb.)				Santa Maria, Calif. (1,006.4 mb.)				Sault Ste. Marie, Mich. (992.1 mb.)				Spokane, Wash. (942.8 mb.)				Swan Island, W. I. (1,010.8 mb.)				Tacubaya, Mexico (774.5 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity				
Surface.....	31	240	24.2	61	27	15	25.9	85	31	71	15.1	81	31	221	9.8	82	31	598	10.9	77	31	10	26.6	83	30	2,306	15.6	
1,000.....	31	117	(*)		27	117	25.3	84	31	125	15.0	80	31	153	(*)		31	103	(*)		31	105	26.3	83	30	72	(*)	
950.....																												

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during October 1947—Continued

Standard pressure surface (mb.)	Tampa, Fla. (1,014.6 mb.)				Tatoosh Island, Wash. (1,006.4 mb.)				Toledo, Ohio (996.2 mb.)			Washington, D. C. (1,018.5 mb.)				
	Number of obser- vations	Dynamic height	Temperature	Relative humidity	Number of obser- vations	Dynamic height	Temperature	Relative humidity	Number of obser- vations	Dynamic height	Temperature	Relative humidity	Number of obser- vations	Dynamic height	Temperature	Relative humidity
Surface	31	9	22.1	88	31	31	10.9	87	31	191	13.8	82	31	25	16.4	79
1,000	31	135	22.0	86	31	84	(*)	81	31	158	(*)	81	31	181	17.3	71
950	31	585	20.0	78	31	515	8.4	81	31	600	18.4	66	31	621	15.7	66
900	31	1,046	17.1	76	31	956	8.8	79	31	1,051	18.2	64	31	1,076	13.3	65
850	31	1,532	14.2	74	31	1,422	3.1	75	31	1,531	11.1	58	31	1,556	11.1	54
800	31	2,042	11.3	71	31	1,911	-6	70	31	2,035	8.7	53	31	2,060	8.4	54
750	31	2,587	8.3	68	31	2,431	-1.9	62	31	2,573	5.9	49	31	2,593	5.4	56
700	31	3,146	5.2	62	31	2,973	-4.7	59	31	3,128	2.8	46	31	3,151	2.6	47
650	31	3,751	1.8	55	30	3,561	-7.9	56	31	3,728	-	43	30	3,750	-9	43
600	29	4,394	-1.6	45	30	4,172	-11.2	63	31	4,360	-4	38	30	4,382	-4.4	41
550	29	5,084	-5.2	34	30	4,840	-14.8	59	31	5,042	-8	35	30	5,062	-8.4	33
500	29	5,823	-9.4	---	30	5,552	-18.9	62	31	5,774	-13.4	---	30	5,796	-13.3	---
450	29	6,640	-14.8	---	30	6,335	-23.7	58	31	6,573	-19.2	---	30	6,594	-18.8	---
400	29	7,513	-20.9	---	30	7,182	-29.1	58	30	7,433	-25.9	---	30	7,458	-25.4	---
350	29	8,487	-27.4	---	29	8,125	-35.4	---	30	8,385	-33.3	---	30	8,412	-32.9	---
300	29	9,575	-35.3	---	29	9,183	-42.1	---	29	9,440	-41.4	---	30	9,478	-41.0	---
250	29	10,824	-43.9	---	27	10,408	-48.6	---	27	10,661	-50.3	---	30	10,691	-50.1	---
200	28	12,288	-54.3	---	22	11,854	-52.3	---	17	12,093	-57.3	---	28	12,129	-56.5	---
175	27	13,132	-60.0	---	14	12,672	-52.5	---	15	12,920	-59.7	---	26	12,963	-59.1	---
150	23	14,074	-65.1	---	5	13,596	-51.2	---	12	13,870	-61.5	---	23	13,927	-61.2	---
125	16	15,170	-69.7	---	---	---	---	---	6	14,996	-64.1	---	14	15,036	-62.7	---
100	7	16,475	-73.9	---	---	---	---	---	---	---	---	---	---	---	---	---

¹ Data not yet received.

* Temperature and relative humidity data for this level are not available or are available only for certain days. See note entitled "Change in Summarization of Radiosonde Data," p. 6, in the January 1946 issue of the MONTHLY WEATHER REVIEW.

NOTE.—All observations scheduled between 0300 and 0500, G. C. T. except at Ciudad Victoria, Mazatlan, and Merida, where they are taken near 0200, G. C. T.

"Number of observations" refers to those of dynamic height only. (In a few cases temperature or humidity data may be missing for one or more standard pressure surfaces

of some observations.) Relative humidity data are not published for standard pressure surfaces having a corresponding mean temperature below -20°C .

All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the values occurring below the operating range of the humidity element. For explanation of the adjustment see article entitled "Curve Method for Obtaining Monthly Means of Relative Humidity," p. 241, MONTHLY WEATHER REVIEW, December 1944.

None of the means included in these tables are based on less than 15 observations at the surface or 5 observations at a standard pressure level.

TABLE 2.—Free-air resultant winds based on pilot balloon observations made near 5 p. m., E. S. T. (±200 G. C. T.) during October 1947. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Velocities in meters per second

Altitude (meters) m. s. l.	Abilene, Tex. (534 m.)			Albuquerque, N. Mex. (1,630 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (868 m.)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (229 m.)			Burlington, Vt. (100 m.)			Charleston, S. C. (16 m.)			Cincinnati, Ohio (276 m.)			Denver, Colo. (1,618 m.)			El Paso, Tex. (1,198 m.)			
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity				
Surface.....	30	168	3.4	31	222	1.5	29	55	2.0	31	282	2.0	30	196	1.2	31	114	1.0	31	109	4.9	30	244	1.6	29	215	1.2	31	90	1.6	31	153	1.1	30	141	1.1	31	249	2.6	
500.....	30	171	4.6	---	---	---	29	62	2.9	---	---	---	30	258	1.7	31	114	1.0	31	117	6.6	30	247	3.0	29	220	3.3	31	82	3.9	31	150	1.7	---	---	---	---	---		
1,000.....	30	174	5.2	---	---	---	25	56	1.5	---	---	---	30	249	3.9	31	163	1.4	31	129	4.8	29	227	4.0	29	263	4.8	29	94	4.8	29	136	1.7	---	---	---	---	---		
1,500.....	28	190	4.6	31	223	2.2	25	53	1.6	31	252	4.3	25	238	7.6	31	211	3.0	30	130	2.2	28	224	4.9	29	282	7.7	29	94	3.5	29	161	1.8	---	---	---	---	---		
2,000.....	28	203	4.2	31	242	3.2	22	323	2.6	29	252	7.0	25	240	9.3	30	229	5.7	30	21	1.0	23	259	6.2	24	295	10.6	28	152	8.8	23	185	2.1	30	154	1.3	31	244	4.5	
2,500.....	27	229	3.8	31	258	4.0	20	314	3.5	27	256	7.5	24	239	10.9	28	233	8.0	30	345	1.7	22	261	4.6	21	301	12.5	28	179	1.9	20	122	1.4	30	208	1.9	31	242	4.1	
3,000.....	25	265	5.9	30	267	6.9	19	305	3.2	26	272	10.8	22	250	11.4	24	235	10.0	28	331	3.8	17	270	4.9	17	305	13.0	22	197	3.1	17	95	8.8	28	264	5.0	29	250	6.3	
4,000.....	24	269	6.1	28	271	8.7	16	291	4.8	23	275	13.1	21	258	14.3	21	244	11.2	25	304	5.9	15	274	5.4	11	296	13.5	16	259	6.6	16	63	2.0	26	271	7.4	29	254	7.8	
5,000.....	23	270	6.5	27	280	9.6	16	298	4.2	20	277	12.5	21	262	15.0	16	256	14.4	21	297	8.2	12	285	5.8	---	---	---	16	258	8.8	14	57	3.1	24	273	9.5	28	259	8.5	
6,000.....	20	272	8.7	26	281	12.8	---	---	---	10	262	8.7	15	272	8.5	---	---	---	19	282	12.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8,000.....	18	268	11.5	21	281	11.8	---	---	---	---	---	---	12	243	8.0	---	---	---	15	272	21.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
10,000.....	12	266	23.1	17	283	14.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
12,000.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
14,000.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	

Altitude (meters) m. s. l.	Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,475 m.)			Greensboro, N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Joliet, Ill. (178 m.)			Las Vegas, Nev. (573 m.)			Little Rock, Ark. (88 m.)			Medford, Oreg. (416 m.)			Miami, Fla. (13 m.)			Mobile, Ala. (66 m.)			Nashville, Tenn. (194 m.)			New York, N. Y. (15 m.)			
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	
Surface.....	31	217	2.1	30	283	1.1	26	65	2.1	29	250	2.0	29	45	2.3	30	180	1.9	31	180	0.8	31	112	1.2	30	246	0.7	30	111	2.5	29	95	1.0	30	50	0.3	31	183	1.0	
500.....	---	---	---	---	---	---	26	77	2.1	---	---	---	29	66	2.7	30	160	2.7	---	---	---	31	108	1.1	30	246	0.8	30	94	3.8	29	65	1.0	30	70	0.9	31	241	2.4	
1,000.....	---	---	---	30	286	1.2	23	103	1.9	29	251	4.2	25	119	1.0	28	185	3.2	31	174	1.6	30	122	1.7	30	222	2.0	29	97	3.0	28	45	1.4	30	105	0.8	29	269	4.3	
1,500.....	---	---	---	30	288	2.0	21	121	0.8	28	250	8.3	22	176	0.9	27	201	2.8	31	203	1.1	29	241	0.4	30	216	4.8	29	127	1.9	27	10	2.0	29	130	1.4	29	263	4.3	
2,000.....	31	219	2.1	30	289	2.4	19	29	1.0	26	253	10.1	21	263	3.2	24	244	2.9	30	219	2.7	29	262	4.8	27	217	6.9	28	190	1.4	22	354	2.9	28	222	1.4	27	301	4.3	
2,500.....	31	219	2.7	30	289	2.4	19	29	1.0	26	253	10.1	21	263	3.2	24	244	2.9	30	219	2.7	29	262	4.8	27	217	6.9	28	190	1.4	22	354	2.9	28	222	1.4	27	301	4.3	
3,000.....	31	225	3.2	28	284	3.6	17	348	1.2	23	259	11.2	20	268	3.5	23	243	2.5	30	241	4.7	22	306	0.2	18	230	9.1	26	223	3.5	15	326	2.1	21	332	2.7	22	297	4.3	
4,000.....	30	244	4.7	28	288	5.3	14	341	2.0	16	267	12.1	18	267	4.5	19	259	4.3	29	244	5.0	17	321	1.8	13	260	7.4	17	233	6.5	12	299	6.9	14	335	3.7	19	292	4.7	
5,000.....	24	246	8.0	26	259	6.5	12	310	3.4	12	263	13.6	16	266	5.8	14	256	5.8	14	257	6.6	14	341	2.6	10	257	11.1	14	236	7.3	---	---	---	---	---	---	---	---	---	
6,000.....	23	263	8.7	23	274	6.4	11	322	2.4	---	---	---	15	256	9.3	13	247	4.5	---	---	---	22	289	12.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8,000.....	19	272	9.8	20	291	8.7	---	---	---	---	---	---	13	246	14.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10,000.....	11	324	7.5	17	285	8.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
12,000.....	---	---	---	13	304	10.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
14,000.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Altitude (meters) m. s. l.	Oakland, Calif. (8 m.)			Oklahoma City, Okla. (396 m.)			Omaha, Nebr. (336 m.)			Phoenix, Ariz. (338 m.)			Rapid City, S. Dak. (982 m.)			St. Louis, Mo. (181 m.)			St. Cloud, Minn. (318 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. (13 m.)			Sault Ste. Marie, Mich. (225 m.)			Seattle, Wash. (116 m.)			Spokane, Wash. (603 m.)			Washington, D. C. (24 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface.....	30	263	3.5	30	190	4.9	29	170	2.3	31	194	0.7	30	249	1.1	29	180	2.2	30	183	2.5	31	131	2.6	30	280	3.5	31	185	0.8	29	214	2.3	31	198	1.6	30	85	0.7
500.....	30	283	2.9	30	187	5.4	29	171	4.1	31	221	1.3	---	---	---	29	178	2.3	30	180	3.2	31	142	3.5	30	287	3.6	31	188	2.5	28	200	4.4	---	---	---	---	---	
1,000.....	29	285	2.1	30	186	5.8	27	188	6.5	31	211	1.6	30	250	1.1	26	187	2.5	27	182	5.1	31	134	3.7	29	274	2.0	30	229	5.5	26	206	7.0	31	199	3.7	28	195	1.4
1,500.....	25	259	2.1	29	189	6.0	27	205	7.6	31	200	2.0	30	248	1.9	26	200	2.2	26	201	7.2	31	146	3.7	29	200	1.3	29	243	7.1	22	213	8.4	29	210	6.1	27	228	1.6
2,000.....	25	241	3.2	26	201	5.2	27	221	9.4	31	210	2.6	29	241	4.1	26	210	2.8	30	221	9.4	30	140	3.2	28	266	1.8	25	256	8.6	16	206	9.8	26	228	7.2	26	258	1.9
2,500.....	24	250	3.0	26	215	4.3	27	225	10.3	30	219	2.8	28	256	5.8	23	211	1.7	22	227	9.7	29	175	2.2	28	296	3.4	24	265	10.1	15	217	10.2	16	232	8.9	26	287	2.7
3,000.....	24	266	4.6	26	233	4.4	25	234	10.8	29	245	3.2	26	254	7.3	23	233	2.1	22	233	10.4	28	231	2.1	28	291	4.7	21	272	11.2									

RIVER STAGES AND FLOODS FOR OCTOBER 1947

C. R. JORDAN

Precipitation during October was very irregular over the United States. Several areas of considerable size received more than twice the normal precipitation for October while other areas experienced severe drought. The eastern and southern parts of the country were particularly dry except for the southeastern corner. Precipitation was also deficient in the Great Lakes region, Montana, and eastern Idaho. Rainfall was much above normal in Florida, Georgia, and most of the Carolinas; in the Central Mississippi Valley; the Dakotas; and the Northwest, extending southeastward through Wyoming and Colorado.

Severe flood conditions prevailed over southern Florida, and flash floods occurred during the month on the Swannanoa River in North Carolina and at Galax, Va., on Chestnut Creek. Some light overflow was reported in northwestern Washington. Severe drought conditions prevailed in the northeastern States and also in the extreme Southwest.

Rains accompanying the hurricane of mid-September resulted in severe flooding in the southern part of Florida. Additional rain, ranging from 2 to 8 inches, during the remainder of September aggravated the flooding. Another hurricane crossed Florida on the night of October 11-12, preceded or accompanied by severe thunderstorms and heavy rainfall over southeast Florida and much of the Everglades. The U. S. Geological Survey reports that a recording rain gage operated by that agency in Hialeah showed 6 inches of rain in 75 minutes, a reading possibly exceeded at other places. Lake Okeechobee reached a stage of 18.7 feet on October 29, the highest stage since records were begun in 1915. The stage was well below the critical height of the levee, but the surface of the lake was several feet higher than surrounding land, which prevented any gravity drainage. Most of south Florida resembled a great lake. The Geological Survey reports that there were roughly 12,000,000 acre-feet of water on the Everglades, an amount comparable with the largest storage reservoirs in the country. Damage to crops and property was very high.

Heavy rains over a small area near Mount Mitchell, N. C., on the morning of the 17th caused a flash flood on the Swannanoa River. The total for the storm, spread over 2½ days at Mount Mitchell, was 7.21 inches, with the heaviest rains occurring during the night of the 16th and 17th. Flood waters were mostly run-off from the

North Fork of the Swannanoa; run-off on the Bee Tree Fork was retained in the Asheville water supply dam. There was minor damage to homes and crops.

Another flash flood swept down narrow Chestnut Creek into Galax, Va., in the early morning of October 18, carried several houses in its wake, and forced several families to evacuate their homes. Furniture factories lost valuable stores of lumber; several factories were affected by water entering their boiler rooms; and the city's water supply pumping system was interrupted for a time. The water receded rapidly after reaching a crest.

Minor floods occurred in the Roanoke River Basin as a result of heavy rains on the eastern slopes of the mountains in North Carolina and southwestern Virginia, from October 8 to 12.

At Pueblo, Colo., an unseasonable rain and electric storm began at 7:26 p. m., October 7, flooding streets and basements and disrupting power service. The storm ended soon after midnight. Damage was relatively light.

Minor overflow was reported in northwestern Washington as a result of moderate to heavy rains over the area on the afternoon and evening of the 18th, following several days of light to moderate precipitation. The rises were rapid and the crests passed rapidly downstream.

FLOOD STAGE REPORT FOR OCTOBER 1947

[All dates in October unless otherwise specified]

River and station	Flood stage	Above flood stages— dates		Crest ¹	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE					
	<i>Feet</i>			<i>Feet</i>	
Dan: Danville, Va.....	11	10	11	14.0	11
Roanoke:					
Weldon, N. C.....	31	13	14	33.6	13
Williamston, N. C.....	10	1	6	11.1	4
Broad: Blairs, S. C.....	14	15	23	10.7	18
		25	25	16.2	25
PACIFIC SLOPE DRAINAGE					
<i>Skagit Basin</i>					
Sauk: Sauk, Wash.....	10	10	19	12.1	19
Skagit: Mt. Vernon, Wash.....	22	19	19	22.0	19
<i>Stillaguamish Basin</i>					
South Fork: Arlington, Wash.....	20.8	19	19	24.76	19
Stillaguamish: Arlington, Wash.....	62.8	19	19	63.9	19
<i>Snohomish Basin</i>					
Snoqualmie: Tolt, Wash.....	51.8	19	20	54.7	20
Snohomish: Snohomish, Wash.....	20	18	20	27.2	19

¹ Provisional.

CLIMATOLOGICAL DATA FOR OCTOBER 1947

CONDENSED CLIMATOLOGICAL SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS

[For description of tables and charts, see Review, January 1943, p. 15]

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and

lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

Section	Temperature						Precipitation					
	Section average	Departure from the normal	Monthly extremes				Section average	Departure from the normal	Greatest monthly		Least monthly	
			Station	Highest	Date	Station	Lowest	Date	Station	Amount	Station	Amount
Alabama	70.2	+5.4	2 stations	92	19	Valley Head	36	31	In.	In.	St. Bernard	In.
Arizona	63.0	+1.4	do.	107	11	2 stations	13	23	1.80	-1.00	Pinedale	5.84
Arkansas	68.3	+5.4	Newport	95	14	Harrison	35	29	1.12	+25	10 stations	5.72
California	60.1	-3	Greenland Ranch	109	5	Bridgeport Dam	16	30	3.72	+55	Rogers	8.37
Colorado	51.1	+4.1	Las Animas	98	1	Dillon	1	26	2.89	+1.60	3 stations	17.49
Florida	74.8	+4	2 stations	92	14	Compass Lake	49	31	1.89	+68	Hawthorne	5.16
Georgia	68.2	+3.2	West Point	92	18	Blairsville	31	31	6.88	+4.74	Dania	25.62
Idaho	49.8	+2.5	2 stations	90	4	Barton Flat	10	24	4.53	+1.85	Sarasota City	1.51
Illinois	63.6	+7.7	do.	92	13	Marengo	28	1	1.25	+1.25	West Point	12.02
Indiana	62.5	+7.3	Madison	92	16	Bluffton	28	1	2.78	+1.25	Mud Lake	9.68
Iowa	61.6	+9.0	Monroe	95	6	Hawarden	26	29	3.14	+50	Moline Ap.	7.57
Kansas	65.8	+8.3	St. Francis	104	5	2 stations	25	124	2.30	-45	Winchester	4.45
Kentucky	64.3	+5.8	2 stations	92	13	Headquarters	27	1	2.30	-45	Mount Ayr	7.61
Louisiana	73.4	+4.8	Leesville	98	16	2 stations	40	11	1.29	-69	La Cygne	5.02
Maryland-Delaware	61.9	+5.5	Keedysville, Md.	94	23	Oakland, Md.	17	1	2.20	-43	Mayfield	5.34
Michigan	57.7	+8.9	2 stations	90	15	Cadillac	17	1	1.83	-41	Amite	5.84
Minnesota	55.4	+8.3	3 stations	93	5	2 stations	22	18	1.49	-1.49	Ocean City, Md.	4.79
Mississippi	70.7	+5.1	Europa	96	20	Vicksburg Ap.	38	29	1.61	-23	Howell	3.94
Missouri	65.1	+7.2	Anderson	94	5	Tarkio	29	29	1.60	-76	Winnebago	3.96
Montana	49.1	+3.9	Crow Agency	91	20	2 stations	13	24	1.80	-76	Yazoo City	4.88
Nebraska	59.6	+7.7	Gothenburg	104	5	Harrison	21	23	3.83	+87	Vichy	7.87
Nevada	53.1	+2.4	Overton	103	4	2 stations	9	25	1.33	-24	Heron	6.91
New England	53.6	+6.0	2 stations	91	17	do.	13	25	1.37	-2.09	Lexington	3.70
New Jersey	60.4	+5.7	Hammononton	89	21	Layton	18	25	2.06	-1.56	Lamaille	2.83
New Mexico	57.3	+3.5	Hatch	99	4	Selsor Ranch	9	26	.71	-45	New Bedford, Mass.	4.55
New York	57.0	+6.9	Elmira	90	16	Roxbury	14	25	1.34	-1.97	Toms River	4.10
North Carolina	63.8	+3.7	3 stations	89	11	Boone	25	1	5.32	+2.03	Santa Clara R. S.	2.95
North Dakota	61.2	+7.0	Oakes	97	5	Belcourt	12	28	1.31	+30	Spencertown	4.29
Ohio	61.3	+7.5	Sidney	90	16	Millport	22	1	1.67	-85	Mount Mitchell	18.71
Oklahoma	69.6	+6.9	Alva	103	5	Kenton	25	25	1.90	-1.00	Selfridge	4.60
Oregon	51.0	+1.2	2 stations	90	3	Sod House	13	22	5.38	+3.8	Kenton	3.96
Pennsylvania	58.6	+5.9	Marcus Hook	93	21	Somerset	17	1	1.34	-1.90	Tipton	6.37
South Carolina	67.2	+3	5Miley	90	10	Walhalla	34	31	4.53	+1.62	Valsets	25.33
South Dakota	56.3	+7.4	Mardo	103	19	McLaughlin	15	27	1.83	+63	Mount Pocono	4.01
Tennessee	65.9	+6.0	Centerville	92	13	Rugby	30	130	2.70	-10	Peizer	13.53
Texas	73.4	+5.7	Throckmorton	104	5	2 stations	32	24	1.24	-1.45	McLaughlin	4.03
Utah	52.4	+3.2	Zion National Park	97	4	Woodruff	8	24	1.83	+63	Kenton	9.08
Virginia	61.9	+4.4	Fredericksburg	94	23	Monteury	19	1	2.97	.00	Roseoe	8.47
Washington	50.0	.0	Richland	86	3	Stockdill Ranch	21	22	7.39	+4.38	Rice Canyon	4.38
West Virginia	60.6	+5.8	McNeill	92	23	Canaan Valley	14	2	1.48	-1.35	Rocky Knob	10.47
Wisconsin	57.8	+9.3	Wisconsin Rapids	91	21	2 stations	17	1	1.57	-82	Wishkah Headworks	27.36
Wyoming	49.7	+5.8	Hampshire	98	1	Verse	8	23	1.21	+11	Spruce Knob	4.01
Alaska (Sept.)	42.2	-1.8	2 stations	70	16	2 stations	4	20	4.53	+91	Prairie du Chien	3.76
Hawaii	75.2	+3	Kaunapali	91	11	Haleakala R. S.	41	19	5.88	+18	Middle Fork	3.17
Puerto Rico	78.9	+1.0	Doa Bocas	98	25	Garzas (2)	58	17	8.67	+68	Little Port Walter	26.53
											Kahana	24.69
											Maricao	22.01
											Barrow	.67
											Ukumehame	.00
											Central San Francisco	1.51

1 Other dates also.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR OCTOBER 1947

District and station	Elevation of instruments			Pressure			Temperature of the air								Precipitation			Wind				Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	Barometer above sea level ¹	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal	Mean	Departure from normal	Maximum	Date	Mean minimum	Minimum	Date	Mean maximum	Greatest daily range	Total heating degree days	Mean temperature of the dew point	Mean relative humidity	Total	Departure from normal	Greatest in 24 hours				Days with 0.01 inch or more	Average hourly velocity	Prevailing direction	Maximum velocity																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
																												Miles per hour	Direction	Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
NEW ENGLAND	Fl.	Fl.	Fl.	Mb.	Mb.	Mb.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	%	In.	In.	In.	MI.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR OCTOBER 1947—Continued

District and station	Elevation of instruments			Pressure		Temperature of the air										Precipitation			Wind					Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms								
	Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal	Mean	Temperature from normal				Mean minimum	Greatest daily range	Total	Departure from normal	Greatest in 24 hours	Days with 0.01 inch or more	Average hourly velocity	Prevailing direction	Maximum velocity		Clear days	Partly cloudy days				Cloudy days	Average cloudiness, tenths						
								Departure from normal	Maximum	Date	Minimum									Date	Miles per hour								Direction	Date				
FLORIDA PENINSULA																																		
Key West	21	10	64	1,012.5	1,013.2	-0.7	77.5	+0.3	86	16	84	72	22	74	14	11	0	72	84	12.46	+4.2	15	8.3	e.	37	sw.	11	9	13	10	5.7	0.0	0	
Miami	25	262	249	1,012.9	1,013.9	-1.0	77.4	-1.6	84	17	81	68	11	73	11	11	0	70	84	13.49	+5.8	14	12.6	e.	38	sw.	12	8	12	11	5.8	0.0	2	
Tampa	35	5	36	1,013.5	1,014.6	-1.3	76.0	+1.7	88	18	84	61	31	68	24	24	0	67	86	3.54	+4.1	7	7.2	ne.	34	sw.	7	8	16	7	8.6	0.0	4	
EAST GULF																																		
Atlanta	1,173	33	72	976.3	1,017.3	-1.7	71.2	+4.6	84	18	75	46	31	58	28	28	33	57	81	2.62	-3	10	9.7	e.	28	ne.	15	6	13	12	5.1	0.0	0	
Macon	370	79	87	1,003.7	1,016.9	-1.7	68.6	+4.1	87	10	78	46	31	60	28	28	16	60	82	3.53	+1.2	12	6.4	e.	23	ne.	18	5	13	13	6.4	0.0	3	
Thomasville	27	48	—	1,006.8	1,016.6	—	71.2	+3.0	85	17	80	55	1	63	25	25	0	66	87	2.75	+3.0	8	—	—	—	—	—	—	—	—	—	—	—	
Apalachicola	35	11	51	1,013.9	1,015.2	-1.7	73.2	+2.6	86	14	79	60	7	67	21	21	1	66	87	2.75	-4.1	10	8.9	ne.	25	n.	20	14	4	13	4.6	0.0	5	
Pensacola	56	54	79	1,013.9	1,015.9	-1.4	73.8	+3.9	88	14	81	59	29	67	21	21	0	64	85	2.52	-1.7	7	7.2	e.	30	se.	22	10	17	4	4.7	0.0	4	
Anniston	618	6	32	998.6	1,017.6	—	67.6	+4.6	87	14	80	39	29	55	38	38	31	58	84	1.09	-1.5	8	—	—	—	—	—	—	—	—	—	—	—	
Birmingham	700	5	63	992.2	1,016.9	-2.1	69.1	+6.7	88	15	80	44	29	58	33	33	21	59	82	1.20	-1.2	6	7.1	e.	24	e.	15	11	9	5.3	0.0	2		
Mobile	57	86	161	1,013.9	1,015.9	-1.7	73.4	+4.1	88	11	82	54	29	65	25	25	0	64	87	2.84	-8.1	10	6.8	n.	20	e.	5	9	17	6	5.2	0.0	6	
Montgomery	218	92	105	1,008.5	1,016.3	-2.3	72.0	+3.4	89	14	81	53	29	63	26	26	0	60	80	.91	-1.6	8	6.6	e.	21	ne.	15	12	10	9	5.3	0.0	1	
Meridian	375	67	92	1,003.1	1,016.6	-1.4	70.6	+6.3	90	17	82	45	29	60	33	33	4	60	84	1.78	-6.1	5	4.6	e.	15	nw.	31	13	13	5	4.3	0.0	3	
Vicksburg	247	82	102	1,007.1	1,015.9	-2.4	71.8	+3.1	90	16	82	49	1	62	25	25	4	60	84	.69	-2.2	3	6.9	n.	24	nw.	31	20	6	5	5.4	0.0	2	
New Orleans	53	76	84	1,013.5	1,015.6	-1.3	76.1	+5.1	90	19	83	63	1	69	21	21	0	66	75	4.08	+1.3	2	7.3	se.	30	ne.	19	12	14	5	4.3	0.0	3	
WEST GULF																																		
Shreveport	249	5	64	1,006.4	1,015.2	-2.4	74.8	+6.2	91	15	85	48	28	59	37	37	2	61	74	1.79	-1.3	3	6.0	n.	33	nw.	26	16	13	2	4.6	0.0	3	
Fort Smith	463	30	30	999.3	1,015.6	-1.7	69.2	+6.4	90	5	82	46	28	56	38	38	29	57	72	4.00	+1.0	2	6.1	ne.	22	nw.	31	20	3	6	3.5	0.0	5	
Little Rock	357	26	58	1,003.7	1,016.3	-1.7	69.7	+6.1	89	14	81	47	1	59	31	31	17	59	74	5.57	+2.8	6	5.5	e.	29	se.	18	18	8	5	3.4	0.0	7	
Austin	605	10	41	993.2	1,014.6	-2.3	76.2	+7.9	94	18	88	57	1	64	31	31	0	61	65	.02	-3.1	1	7.5	s.	34	n.	31	13	16	2	3.9	0.0	0	
Brownsville	57	5	54	1,010.8	1,012.9	-2.0	79.0	+4.1	94	31	89	61	21	69	27	27	0	69	78	1.54	-2.0	1	8.1	se.	32	ne.	19	8	20	3	2.6	0.0	2	
Corpus Christi	20	6	33	1,013.5	1,014.2	-1.7	78.0	+6.9	95	31	88	61	21	68	30	30	0	69	78	1.04	—	1	9.2	se.	24	ne.	31	17	11	3	3.7	0.0	5	
Dallas	512	3	45	996.6	1,014.9	-2.0	73.1	+3.8	95	3	84	49	20	62	39	39	9	60	68	1.32	-1.3	7	7.4	se.	27	w.	25	17	9	5	3.7	0.0	5	
Fort Worth	679	40	56	990.9	1,014.9	-2.0	73.2	+7.5	93	5	84	53	27	63	28	28	9	60	65	2.14	-6.1	5	8.7	se.	29	n.	31	20	6	5	3.8	0.0	3	
Galveston	54	122	129	1,013.2	1,015.2	-1.7	76.8	+4.1	96	15	81	63	29	72	18	18	0	70	82	2.11	-2.2	5	9.8	e.	42	w.	29	20	6	5	3.8	0.0	2	
Houston	138	157	190	1,009.8	1,014.9	-2.0	76.6	+6.3	92	18	85	62	2	67	26	26	0	66	78	2.34	-1.3	2	7.7	se.	28	nw.	31	16	10	5	3.8	0.0	4	
Palestine	510	64	72	997.6	1,015.2	-2.4	74.0	+6.3	92	18	85	54	28	63	29	29	0	66	64	.64	-2.7	4	5.4	ne.	17	nw.	31	18	10	3	3.6	0.0	4	
Port Arthur	34	59	134	1,013.9	1,014.9	-1.7	76.6	+5.0	90	15	85	62	2	68	25	25	0	66	81	.63	-2.8	5	9.7	s.	29	n.	19	15	11	5	3.8	0.0	4	
San Antonio	693	8	51	989.8	1,014.2	-2.1	76.3	+3.8	93	5	89	51	1	64	36	36	0	62	66	.19	-2.0	2	7.3	se.	30	ne.	8	10	19	2	4.7	0.0	1	
OHIO VALLEY AND TENNESSEE																																		
Chattanooga	762	6	66	990.2	1,017.6	-1.7	64.3	+7.8	86	14	78	39	31	54	37	37	46	56	80	2.45	-2	12	5.6	s.	22	e.	16	8	12	11	4.7	0.0	2	
Knoxville	995	27	71	982.7	1,018.6	—	66.0	+7.4	86	22	77	40	30	55	37	37	41	56	79	1.61	-1.0	11	5.8	ne.	29	w.	19	8	11	12	5.5	0.0	2	
Memphis	399	5	49	1,002.0	1,016.3	-2.0	70.0	+8.6	89	14	82	44	1	58	36	36	21	58	78	5.67	+3.0	9	5.0	e.	18	sw.	27	12	16	8	7	4.1	0.0	1
Nashville	546	5	72	998.0	1,018.0	-1.3	67.9	+6.9	89	15	80	40	30	55	36	36	48	55	76	2.10	-4.1	9	6.3	se.	26	se.	27	12	13	6	4.7	0.0	1	
Lexington	989	4	58	982.7	1,018.6	—	63.6	+6.2	85	25	75	34	1	52	33	33	88	52	61	2.79	+1.2	7	—	—	—	—	—	—	—	—	—	—	—	
Louisville	525	5	54	999.0	1,018.0	-1.0	65.0	+7.5	89	15	77	36	1	53	39	39	82	54	77	2.74	+1.1	6	5.6	n.	22	sw.	31	8	4	12	7	4.7	0.0	2
Evansville	431	6	40	1,002.0	1,017.6	-1.4	64.6	+7.6	88	15	78	38	30	52	43	43	106	52	79	2.44	-1.1	6	5.6	n.	30	sw.	28	16	9	5	4.3	0.0	3	
Indianapolis	823	5	54	987.8	1,017.6	-1.0	62.4	+7.3	85	23	74	37	1	50	36	36	116	52	79	2.44	-1.1	6	5.6	n.	30	sw.	28	16	9	5	4.3	0.0	3	
Terre Haute	575	4	36	997.6	1,018.6	—	62.4	+7.3	85	23	74	37	1	50	36	36	108	52	79	2.44	-1.1	6	5.6	n.	30	sw.	28	16	9	5	4.3	0.0	3	
Cincinnati	627	135	148	996.3	1,019.3	—	65.6	+6.7	85	22	76	36	1	55	34	34	74	52	78	2.05	-1.1	6	5.6	n.	30	sw.	28	16	9	5	4.3	0.0	3	
Columbus	822	90	110	983.1	1,019.3	—	64.2	+6.0	85	16	75	36	1	54	34	34	114	51	79	2.11	-5.1	7	8.4	s.	29	s.	24	17	7	3.9	0.0	2		
Dayton	1,003	6	55	983.1	1,019.3	—	64.2	+6.0	85	16	75	36	1	54	34	34	114	51	79	2.11	-5.1	7	8.4	s.	29	s.	24	17	7	3.9	0.0	2		
Elkins	1,947	5	45	951.9	1,021.3	+1.0	67.6	+5.4	84	23	72	32	2	43	33	33	232	46	83	1.35	-1.6	5	4.9	sw.	30	w.	28	12	4	15	5.6	0.0	1	
Parkersburg	637	77	84	996.6	1,019.0	+6	68.5	+7.4	85	16	76	32	2	51	40	40	90	82	80	.89	-1.6	9	4.6	sw.	17	nw.	28	12	8	11	4.7	0.0	2	
Pittsburgh	842	39	54	989.8	1,020.3	+1.3	62.0	+7.9	84	22	74	31	1	50	34	34	126	48	70	1.19	-1.3	5	7.8	s.	26	w.	28	13	8	10				

SEVERE LOCAL STORMS FOR OCTOBER 1947

[The table hereunder contains such data as have been received concerning severe local storms that occurred during the month. A revised list will appear in the United States Meteorological Yearbook.]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Beaches, Fernandina to New Smyrna, Fla.	Oct. 1947 Sept. 26— Oct. 6				\$5,000,000	"Northeaster," with high tides.	A prolonged period of northeast winds, occasionally strong, caused abnormally high tides and heavy surf; washed out seawalls, carried away beach sand, and undermined houses causing them to collapse. Estimated that \$4,000,000 of total damage occurred in September and \$1,000,000 in October. Report of September damage made in the "Florida Climatological Data for September."
Shawnee Co., Kans.	3	6 p. m.	33	0	500	Tornado.	An incipient vortex cloud seen from the Boys' Industrial School, Topeka; evidently developed and reached ground at Stroud home 4½ miles to northeast, where vortex cloud plainly seen. Large hay barn roof blown off and 1 or 2 small buildings damaged. A few trees damaged.
Denver, Colo.	7	5 p. m.		1		Electrical.	Lightning struck tree, glancing off to hit girl.
Jacksonville, Fla.	7	3:15 p. m.	150 to 50	0	100,000	Tornado during thunderstorm.	Storm path ¾ mile long; moved northward. Unroofed several houses, uprooted and broke trees, upset automobiles, and wrecked a trailer village. 10 persons injured, none critically.
Green Cove Springs, Fla.	7	7:30 p. m.		0		Tornado.	Small tornado struck a trailer village and did considerable damage.
Levelland, Hockley Co., Tex.	8	3:15 p. m.	16		1,800,000	Hail.	\$1,000,000 damage to buildings and automobiles; \$750,000 damage to crops; \$50,000 damage to livestock.
South Dakota, western portion.	10			0		Forest fire.	Forest fire, 10 miles south of Deadwood, burnt over 2,000 to 3,000 acres.
Off Cape Maysi, Cuba.	11	9 a. m. E. S. T.		0		Waterspout.	Spout moved slowly westward and appeared to move out from underneath itself at the water's surface before disintegrating; under observation for 14 minutes.
Miami and vicinity, Fla.	11-12	Night of 11 to morning of 12		0		Tornadoes.	Several tornadoes, in connection with passage of tropical storm, did considerable damage to roofs.
Tornillo, El Paso Co., Tex.	13	Afternoon		0	100,000	Hail and tornado.	Principal damage to cotton and alfalfa. 1 barn roof blown off.
Leoti, Wichita Co., Kans.	14	3:30 p. m.			500	Heavy hail.	Covered only a few square miles.
South Carolina, southern portion.	15	12 a. m. to 12 noon.		1	185,000	Winds and high tides.	Strong gales prevailed along the coast, especially from Charleston area southward, due to tropical storm moving inland near Savannah, Ga.; strongest wind at Charleston, 54 m. p. h., at 3:55 a. m.; Parris Island reported gusts to 65 m. p. h., at 4:30 a. m. Tides on lower coast ranged from 12 feet above mean low at Parris Island to 9 feet above at Charleston. \$150,000 damage to crops. Man killed by falling tree at Charleston.
Chatham Co., coastal area, Savannah, Savannah Beach, Ga.	15	6 a. m.			2,000,000	Hurricane.	Wind velocities estimated at more than 100 m. p. h. on coast, gusts as high as 95 at Savannah. Damage consisted of some structures demolished or practically so; many roofs blown off or badly damaged; windowpanes and plate glass windows blown out in every section; many trees blown down or delimbed, with resultant damage in communication lines or to nearby structures. 1,500 or more buildings substantially damaged, 100 of which were business houses. Damage to Savannah Beach almost \$1,000,000, with heavy damage in city of Savannah. Damages to crops, chiefly pecan trees, probably as great as \$100,000. Storm rapidly lost intensity as it moved inland, with damage almost wholly limited to section between Savannah and Brunswick not more than 50 miles from coast; losses in this area appear to be less than \$250,000, mostly to timber, communication lines, roads, and bridges.
Ablene, Taylor Co., Tex.	15	6:40 p. m.	13		35,000	Hail.	Principal damage to buildings and livestock.
Shawnee, Pottawatomie Co., Okla.	17	6:30 p. m.			2,000	Electrical and high wind.	Electric power disrupted; a few chicken houses and cow barns blown over; some trees blown down.
Galax, Va.	17-18	7 p. m. to shortly after midnight.			250,000	Flash flood.	Chestnut Creek out of banks. Furniture factories lost expensive lumber. A milk cannery's boiler room submerged, resulting in loss of great quantity of milk on hand and spoilage of 3 days' supply already contracted for. 7 houses carried away; occupants of 150 other homes forced to leave. City's water supply system became inoperative.
Montgomery Co., Tenn.	18	2:15 a. m.			4,500	Electrical.	Damage from fires set by lightning.
Montgomery Co., Tenn.	18	6:00 a. m.			800	do.	1 barn and contents burned.
Fairview, Major Co., Okla.	22	8 p. m.			3,000	do.	1 barn with 900 bales alfalfa hay burned after being struck by lightning.
Garnett and Anderson Cos., Kans.	23	Evening.	12		3,500	High winds and hail.	Storm from southwest; path 100 yards long. A number of small farm buildings damaged. Some evidence of a tornado.
Munday, Knox Co., Tex.	24	7:40 a. m.			4,000	Hail and electrical.	Principal damage to cotton. 1 person injured by lightning.
Galax, Va.	25	3-4 a. m.				Heavy rains and flooding.	Chestnut Creek again out of banks. About 100 families forced to evacuate their homes. City's water supply system inoperative. 4 furniture plants closed because of unavailability of water.
Coleman, Tex.	25	Afternoon.			10,000	Hail.	Damage to cotton, late feed, roofs, and windows.
Junction, Kimble Co., Tex.	25	5 p. m.	13		24,000	Hail and wind.	Principal damage by hail to roofs and windows.
Jacksonville to Rusk, Cherokee Co., Tex.	26	Afternoon.	14		305,000	do.	Principal damage to buildings and automobiles.

¹ Miles instead of yards.

LATE 1 STORM REPORTS FOR JULY-SEPTEMBER 1947

[The table hereunder contains such data as were received concerning severe local storms that occurred during the month. A revised list will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Mexico and vicinity Audrain Co., Mo.	July 5	Afternoon				High wind, hail, and electrical.	Storm from northwest blew down trees and wires, and damaged farm buildings. Some damage occurred to oat, wheat, and corn crops. Hailstones $\frac{1}{4}$ inch in diameter.
Eldon, Miller Co., Mo.	5	6 a. m.		1		Electrical	A minister killed when lightning struck tent pole at a religious camp meeting. 3 women in another tent shocked, but not seriously injured.
Fulton, Callaway Co., Mo.	28	6-9 a. m. and afternoon.				High wind and electrical.	Storm from northwest damaged trees, wires, and porches; lightning struck a home and 2 barns, resulting in destruction of 1 barn and contents of hay, feed, farming implements, and harness. During afternoon lightning struck another barn, burning it to ground; loss of contents of hay, feed, farm equipment, and harness, and several head of livestock.
Gerald and Stanton, Franklin Co., Mo.	28	7-8 a. m.	110	1	2,000	High wind	Storm from north over a strip 20 miles long. Fruit trees stripped of 25 percent of fruits; some trees uprooted, and roofs damaged. Damage to fruit not known. 1 death caused by falling tree.
Iowa, south-central portion.	August 25	Early morning.				Electrical, wind and rain.	Local damage from wind and lightning. Light plant at Winterset, Madison Co., flooded. Many cornfields knocked down by wind. In Des Moines, electric power off for several hours. 800 telephones out of order.
Sanborn, O'Brien Co., Iowa	27	Evening	114-2			Hail	Hailstones, larger than a quarter, stripped area 9 miles long.
Charles City, Floyd Co., Iowa	28	9 p. m.			40,000	Electrical	Lightning struck dairy farm, resulting in fire; loss of building and much livestock.
Hampton, Franklin Co., Iowa	29	Early morning.				Heavy hail	Hail ranged up to 1 inch in diameter.
Navajo Co., Ariz.	Sept. 2				5,000	Flash floods	Shoulders and bridges of highway U. S. 66 damaged.
Leon, Decatur Co., Iowa	3	4:30 a. m.				Wind	Winds of near tornado velocity damaged 1 business building, high school, and many homes. Strong winds only lasted several minutes.
Charles City, Floyd Co., Iowa	9	Evening			5,000	Wind	Storm one of the worst in recent years; 46 m. p. h. wind for 5-minute interval. Funnel-shaped cloud observed, but rotary winds did not reach ground. Main damage to farms near city limits; windows broken and many trees blown over in city.
Des Moines, Iowa	11	8 p. m.			150,000	Electrical	Lightning struck Iowa Pipe & Tile Co., causing fire and complete loss of building.
Safford-Bowie Junction, Graham Co., Ariz.	20				1,700	Heavy rains	Bank protection and cut-off walls on Douglas-Safford Highway, near Artesia damaged.

SOLAR RADIATION AND SUNSPOT DATA FOR OCTOBER 1947

[Solar Radiation Investigation Section, I. F. HAND in Charge]

Explanations of the tables and references to descriptions of instruments, stations, methods of observation, and summaries of data are given in the Monthly Weather Review, vol. 72, page 43, January 1944. A list of pyrheliometric stations is given on page 45 of the same Review. An explanation of the formula used in computing the air mass values for each station will be found in vol. 75, page 47, March 1947.

SOLAR RADIATION OBSERVATIONS

TABLE 1.—Solar radiation intensities during October 1947
[Gram calories per minute per square centimeter of normal surface]

Date	Sun's zenith distance								Vapor pressure	
	A. M.				0.0°	P. M.				
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°	7:30 a. m. ¹

MADISON, WIS.

October	Air mass								mb.	mb.	
	4.81	3.84	2.88	1.92	*0.96	1.92	2.88	3.84			4.81
	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.			cal.
1		0.74	0.88	1.06	1.27					4.8	7.2
2				.71						9.4	10.6
3		.54	.75	.95						15.3	18.3
4		.87	1.03	1.18	1.46					7.8	9.8
5	0.74		.91	1.04	1.40					6.9	11.4
6		.73	.99	1.31	1.49					9.1	10.2
7		.55	.62	.75	.96	1.36				12.3	17.3
8		.48	.60	.71	.92	1.31				14.2	17.0
9		.58	.70	.81	.94	1.09				12.3	14.2
10		.35	.43	.55	.80					15.3	18.3
11		.36	.52	.66	.77	.98				15.8	16.5
12		.88	.96	1.06	1.16	1.36				7.8	9.1
13		.74	.84	.98	1.15	1.29				10.6	13.2
14		.70	.81	.95	1.13	1.40				13.2	14.2
15											
16											
17											
18											
19											
20											
21											
22											
Means	.61	.72	.86	1.01	1.31						
Departures	-.12	-.15	-.15	-.17	-.11						

LINCOLN, NEBR.

		Air mass										
		4.77	3.81	2.86	1.91	0.95	1.91	2.86	3.81	4.77		
October		cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.	mb.
4					1.13	1.36					10.6	9.1
7					1.06	1.18	0.99				14.6	16.9
10		0.30	0.49	0.62	.88	1.20					15.8	16.4
13		.62	.72	.88	1.03	1.30	1.10	0.92	0.79	0.71	9.8	13.2
16					1.28	1.17	1.06	.92	.82		15.3	14.2
17		.54	.64	.75	.88	1.27	1.08	.92	.79	.67	13.2	16.9
18		.85	.96	1.07	1.25	1.43	1.28				9.4	6.9
19		.84	.94	1.05	1.22	1.41	1.28	1.12	1.03	.94	9.8	11.4
20		.72	.85	.97	1.17	1.34	1.10	.92	.82	.73	10.6	11.0
21		.88	.94	1.07	1.20	1.40	1.18	.96			8.7	7.4
22		.83	.92	1.05	1.27	1.42	1.31	1.14	1.07	.98	7.8	8.4
23		.56	.64	.83	1.22	1.41	1.21	.98	.96	.77	5.3	9.4
24												
25												
26												
27												
28												
29												
Means		.68	.79	.92	1.12	1.33	1.17	1.00	.91	.80		
Departures		-.12	-.12	-.15	-.14	-.13	-.07	-.06	-.01	-.02		

* Extrapolated

¹ Meridian time.

SOLAR RADIATION OBSERVATIONS—Continued

TABLE 1.—Solar radiation intensities during October 1947—Con.

[Gram calories per minute per square centimeter of normal surface]

Date	Sun's zenith distance								Vapor pressure		
	A. M.				0.0°	P. M.				7:30 a. m. ¹	1:30 p. m. ¹
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°		

CLIMAX, COLO.

		Air mass									
		3. 24	2. 89	1. 94	1. 29	*0. 65	1. 29	1. 94	2. 89		
October		cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.	mb.
3							1. 42	1. 29			
4				1. 38	1. 48		1. 43	1. 32			
6					1. 46						
8				1. 29	1. 45		1. 46	1. 34			
9					1. 46		1. 46	1. 32	1. 24	1. 16	
10					1. 33	1. 41					
13					1. 33	1. 49					
16					1. 43	1. 55	1. 54	1. 40	1. 32	1. 24	
18					1. 45	1. 55	1. 52	1. 38	1. 28	1. 20	
20			1. 34	1. 43	1. 50		1. 50	1. 36	1. 22	1. 12	
24					1. 49						
25								1. 28			
26								1. 44	1. 34	1. 23	
27						1. 53				1. 21	
28					1. 56		1. 53	1. 40	1. 30	1. 20	
29							1. 52	1. 42	1. 30	1. 18	
31											
Means.....		(1. 34)	1. 38	1. 43		1. 49	1. 37	1. 28	1. 19		
Departures.....		. 00	. 00	+ . 08		+ . 02	+ . 03	+ . 03	+ . 03		

TABLE MOUNTAIN, CALIF.

	Air mass									mb.	mb.
	3.76	3.01	2.26	1.51	0.75	1.51	2.26	3.01	3.76		
October	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.		
1				1.45							
2				1.45							
3				1.36							
4				1.37							
5				1.46							
6				1.43							
7				1.45							
8				1.44							
9				1.43							
10				1.45							
11				1.44							
12				1.43							
13				1.45							
14				1.44							
15				1.43							
16				1.45							
17				1.44							
18				1.43							
19				1.44							
20				1.53							
21				1.45							
22				1.45							
23				1.43							
24				1.42							
25				1.43							
26				1.42							
27				1.46							
28	1.22	1.30	1.39	1.50							
29				1.46							
30											
31											
Means	(1.22)	(1.30)	(1.39)	1.44							
Departures	+.04	+.03	+.03	-.01							

SOLAR RADIATION OBSERVATIONS—Continued

TABLE 1.—Solar radiation intensities during October 1947—Con.
[Gram calories per minute per square centimeter of normal surface]

Date	Sun's zenith distance								Vapor pressure		
	A. M.				0.0°	P. M.				7:30 a. m. ¹	1:30 p. m. ¹
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°		

BLUE HILL, MASS.

October	Air mass										mb.	mb.
	4.86	3.89	2.92	1.94	*0.97	1.94	2.92	3.89	4.86			
1	cal. 1.04	cal. 1.14	cal. 1.21	cal. 1.38		cal. 1.18	cal. 1.01	cal. 0.87	cal. 0.75	cal. 4.4	4.4	4.5
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
Means												
Departures												

SOLAR RADIATION OBSERVATIONS—Continued

TABLE 1.—Solar radiation intensities during October 1947—Con.
[Gram calories per minute per square centimeter of normal surface]

Date	Sun's zenith distance									Vapor pressure	
	A. M.				0.0°	P. M.				7:30 a. m.	1:30 p. m.
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°		

BOSTON, MASS.

October	Air mass										mb.	mb.
	4.96	3.96	2.97	1.98	*0.99	1.98	2.97	3.96	4.96			
1	cal. 1.04	cal. 1.14	cal. 1.21	cal. 1.38		cal. 1.18	cal. 1.01	cal. 0.87	cal. 0.75	cal. 4.4	4.4	4.5
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
Means												
Departures												

Ratio, Boston/Blue Hill on Comparable Dates

0.91	0.91	0.88	0.89	0.87	0.82	0.85	0.78					
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*Extrapolated.

¹ Meridian time.TABLE 2.—Daily totals and weekly means of solar radiation (direct+diffuse) received on a horizontal surface
[Gram calories per square centimeter]

Date	Washington, D. C.	Madison, Wis.	Lincoln, Nebr.	New York, N. Y.	Fresno, Calif.	Fairbanks, Alaska	Columbia, Mo.	Boston, Mass.	Nashville, Tenn.	Twin Falls, Idaho	La Jolla, Calif.	Riverside, Calif.	Blue Hill, Mass.	Newport, R. I.	Salt Lake City, Utah	Put-in-Bay, Ohio	State College, Pa.	Davis, Calif.	Toronto, Canada	Boulder, Colo.	East Wareham, Mass.	Honolulu, Hawaii	Pearl Harbor, Hawaii
1947	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.
Oct. 1	500	423	294	462	496	75	279	438	444	377	442	389	495	498	410	383	440	392	390	368	450	538	575
Oct. 2	443	356	362	299	476	78	440	162	438	242	450	415	230	248	342	427	323	356	291	256	186	600	578
Oct. 3	379	233	186	404	474		466	321	423	377	335	430	404	460	404	331	369	434	284	360	311	542	518
Oct. 4	415	338	480	326	467	191	476	357	356	408	174	437	412	417	402	367	345	429	293	440	361	594	578
Oct. 5	444	393	440	351	368	155	470	346	347	122	320	439	364	428	407	406	328	282	322	429	383	484	498
Oct. 6	390	323	289	363	478	50	457	327	410	333	270	168	392	416	284	413	347	440	334	301	368	552	480
Oct. 7	347	264	414	349	308	143	369	321	364	354	410	450	392	437	282	406	367	61	307	338	395	571	548
Means	417	333	352	365	438	115	422	325	397	316	343	390	384	415	332	405	360	342	317	356	351	554	539
Departures	-88	+49	+21	+64	+12	0	+60	+56	+53	-42	-40	-1	+73	+112		+69	+80	-52	+45	+24	+52		
Oct. 8	213	311	165	105	369	167	311	247	144	290	418	459	310	244	349	91	278	335	323	388	187	537	556
Oct. 9	131	401	363	279	274	75	385	365	101	352	394	441	394	413	377	367	175	87	367	391	404	575	505
Oct. 10	211	377	410	308	212	36	448	290	367	185	400	283	380	343	70	391	69	167	351	307	362	370	388
Oct. 11	194	312	275	368	309	133	418	335	221	258	169	231	401	415	121	306	337	467	322	130	370	557	448
Oct. 12	192	299	264	368	453	52	398	342	412	376	303	195	408	417	376	387	262	440	269	308	346	348	393
Oct. 13	329	382	417	154	412	146	388	217	344	319	118	234	330	298	274	244	287	416	220	389	294	252	244
Oct. 14	352	342	301	345	434	53	402	325	352	345	379	422	412	390	290	358	371	414	323	126	360	439	352
Means	232	346	314	275	352	95	393	303	277	304	312	324	377	360	262	306	254	332	311	291	33	440	412
Departures	-73	+88	+7	-12	-41	+5	+32	+57	-10	-36	-72	-54	+61	+46		+34	-6	-32	+77	-36	+44		
Oct. 15	305	321	276	328	418	44	424	332	383	280	400	411	387	387	361	365	337	324	258	343	356	528	532
Oct. 16	92	311	414	271	233		318	285	211	108	331	243	368	331	283	351	138	203	282	368	321	579	545
Oct. 17	161	242	384	213	430		295	306	368	349	377	350	369	192	311	308	182	424	213	393	234	545	471
Oct. 18	160	244	417	146	427		385	224	378	349	199	406	252	290	343	101	188	416	137	371	236	561	526
Oct. 19	303	349	413	77	420		398	179	360	333	186	414	156	122	378	315	80	392	182	395	148	504	404
Oct. 20	401	331	414	346	386		416	279	108	325	76	394	341	320	366	382	395	284	306	355	277	512	506
Oct. 21	370	319	391	317	418	95	370	310	222	300	350	379	375	342	96	362	354	302	282	327	337	514	413
Means	256	302	357	242	390		368	273	290	292	274	371	321	279	305	312	239	336	230	364	273	535	485
Departures	-28	+69	+92	-23	+25		+42	+47	-6	-16	-62	+23	+37	-4		+65	+9	-8	+17	+43	+18		
Oct. 22	326	313	347	252	393	99	301	318	381	337	361	419	388	370	141	342	297	326	234	51	327	540	504
Oct. 23	357	213	74	263	346	44	242	254	284	270	354	344	312	288	197	326	312	297	163	264	397	365	
Oct. 24	292	147	117	317	393	23	155	269	268	331	352	376	340	296	335	325	385	380	316	134	234	410	467
Oct. 25	282	60	374	248	370	73	53	274	279	330	337	387	336	21	329	149	276	351	201	279	245	161	219
Oct. 26	319	86	131	219	368	103	32	173	184	315	352	380	250	291	371	201	223	351	184	353	252	352	330
Oct. 27	356	28	183	220	297	8	199	244	390	264	316	375	302	274	316	278	320	270	194	341	258	429	379
Oct. 28	100	248	386	170	130	23	143	239	83	155	284	316	274	283	253	175	108	91	120	328	308	482	441
Means	290	156	230	241	328	53	161	253	267	286	336	371	314	296	277	257	274	295	221	235	270	396	385
Departures	+32	-55	-46	+15	-16	-5	-112	+59	+27	+10	+24	+43	+95	+68		+31	+67	-26	+32	-58	+64		

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1947

By LUCY T. DAY

NOTE: Publication of "Positions, Areas, and Counts of Sunspots" in the MONTHLY WEATHER REVIEW will be discontinued with the December 1947 issue. The data will be issued thereafter through publications of the U. S. Naval Observatory, at various times depending on the sunspot activity. Current data will be distributed monthly to a limited number of persons on request addressed to Superintendent, U. S. Naval Observatory, Washington 25, D. C.

[Equatorial Division, U. S. Naval Observatory]

[Communicated by the Superintendent, U. S. Naval Observatory.] All measurements and spot counts were made at the Naval Observatory from plates taken at the observatories indicated. Difference in longitude is measured from the central meridian, positive toward the west. Latitude is positive towards the north. Areas are corrected for foreshortening and expressed in millionths of Sun's hemisphere. For each day under Mount Wilson group number, longitude, latitude, area of spot or group, and spot count, are included respectively: number of groups, assumed longitude of center of the disk, assumed latitude of center of the disk, total area of spots and groups, and total spot count.

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- fer- ence in longi- tude	Lon- gi- tude	Lat- itude	Dis- tance from cen- ter of disk				
1947 Oct. 1	h m		°	°	°	°				
	10 21	8861	-86	171	-18	86	194	1	G	U. S. Naval.
		8859	-74	183	+21	74	48	1		
		8859	-69	188	+21	69	412	2		
		8859	-66	191	+22	66	24	1		
		8858	-47	210	+24	48	145	18		
		8858	-42	215	+25	44	48	4		
		8855	-46	211	-17	51	121	2		
		8855	-37	220	-13	42	97	16		
		8855	-33	224	-14	40	170	8		
		8852	-15	242	-11	24	242	10		
		8852	-11	246	-9	20	194	2		
		8860	-7	250	-19	28	12	2		
		8851	-4	253	-15	23	73	12		
		8848	+15	272	-33	43	6	1		
		8843	+22	279	-18	24	158	9		
		8841	+31	288	-15	32	73	1		
		8841	+31	288	-13	32	24	15		
		8856	+36	293	+10	36	30	1		
		8839	+41	298	-14	46	48	2		
		8839	+43	300	-10	46	12	2		
		8846	+43	300	+18	44	436	14		
		8834	+70	327	-20	74	36	1		
		8833	+88	345	+16	88	388	1		
		(15)		(257)	(+7)		2,997	126		
2	10 34	8861	-73	171	-18	76	194	1	G	Do.
		8864	-72	172	-12	75	48	1		
		8863	-68	176	+16	68	24	4		
		8859	-61	183	+20	61	485	16		
		8859	-54	190	+20	54	436	3		
		8859	-52	192	+22	53	12	1		
		8858	-35	209	+25	38	461	22		
		8858	-27	217	+24	31	61	3		
		8855	-32	212	-16	40	97	2		
		8855	-25	219	-12	31	61	9		
		8855	-19	225	-13	28	339	11		
		8852	-2	242	-11	18	218	8		
		8852	0	244	-13	20	24	6		
		8852	+2	246	-9	17	145	2		
		8860	+7	251	-19	28	12	3		
		8851	+10	254	-15	24	24	10		
		8857	+19	263	-2	22	61	7		
		8862	+34	278	+9	34	61	6		
		8843	+37	281	+19	39	73	9		
		8841	+45	289	+15	45	61	1		
		8856	+49	293	+21	49	6	1		
		8839	+56	300	-10	58	61	4		
		8846	+57	301	+18	57	533	10		
		(16)		(244)	(+7)		3,497	140		
3	10 20	8868	-80	151	+15	80	48	6	G	Do.
		8869	-77	154	+12	77	12	1		
		8861	-60	171	-19	65	194	1		
		8864	-60	171	-12	63	61	4		
		8863	-55	176	+16	55	145	8		
		8859	-50	181	+20	50	48	4		
		8859	-46	185	+19	47	533	19		
		8859	-40	191	+19	41	436	11		
		8867	-34	197	+12	34	12	2		
		8858	-21	210	+25	27	533	20		
		8855	-19	212	-17	31	48	5		
		8855	-9	222	-14	24	339	23		
		8865	+2	233	-23	30	36	5		
		8852	+12	243	-11	22	194	5		
		8852	+14	245	-9	22	218	7		
		8851	+23	254	-17	33	73	7		
		8857	+32	263	-4	34	121	8		

See footnotes at end of table.

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1947—Continued

Date	East- stand- ard time	Mount Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- fer- ence in longi- tude	Lon- gi- tude	Lat- itude	Dis- tance from cen- ter of disk				
1947 Oct. 3	h m		°	°	°	°				
	10 20	8857	+36	267	-3	38	73	4	G	U. S. Naval.
		8862	+46	277	+8	46	97	11		
		8843	+49	280	+18	49	16	5		
		8841	+50	290	+14	50	48	3		
		8856	+62	293	+8	62	24	4		
		8846	+67	298	+17	67	145	8		
		8846	+71	302	+18	71	291	3		
		8839	+69	300	-12	71	48	1		
		8839	+70	301	-10	71	61	3		
		(19)		(298)	(+7)		3,854	178		
4	10 12	8868	-65	152	+14	65	24	4	F	Do.
		8869	-61	156	+11	61	6	1		
		8864	-48	169	-12	51	73	5		
		8861	-47	170	-18	52	194	1		
		8863	-46	171	+17	47	6	1		
		8863	-41	176	+16	41	97	1		
		8859	-35	182	+19	36	339	15		
		8859	-31	186	+18	33	436	6		
		8859	-27	190	+19	30	485	5		
		8867	-23	194	+11	23	12	2		
		8866	-14	203	+18	18	145	13		
		8868	-10	207	+25	21	267	9		
		8858	-3	214	+24	18	170	7		
		8855	-6	211	-15	23	121	5		
		8855	0	217	-14	21	145	3		
		8855	+6	223	-14	22	388	14		
		8865	+15	232	-24	34	73	6		
		8852	+24	241	-11	30	145	3		
		8852	+27	244	-8	31	121	4		
		8851	+36	253	-17	43	48	4		
		8857	+42	259	-4	43	194	8		
		8857	+48	265	-3	49	170	7		
		8862	+60	277	+9	60	170	3		
		8843	+63	280	+18	63	16	2		
		8841	+73	290	+15	73	12	1		
		8856	+78	295	+9	78	48	1		
		8846	+83	300	+16	83	97	1		
		8846	+86	303	+17	86	194	1		
		(19)		(217)	(+7)		4,196	133		
5	11 5	8868	-51	153	+14	51	12	3	F	Do.
		8864	-34	170	-12	39	73	13		
		8861	-33	171	-18	41	194	1		
		8863	-27	177	+17	29	61	1		
		8859	-18	186	+18	21	1,406	25		
		8870	-21	183	+11	22	12	3		
		8866	-3	201	+17	11	73	5		
		8866	+3	207	+17	11	36	2		
		8858	+5	209	+24	18	242	8		
		8858	+11	215	+22	18	73	6		
		8855	+8	212	-16	25	12	6		
		8855	+19	223	-14	28	242	9		
		8865	+29	233	-25	43	24	2		
		8852	+39	243	-12	44	145	1		
		8852	+41	245	-10	44	73	2		
		8851	+52	256	-18	57	12	3		
		8857	+60	264	-4	62	436	7		
		8862	+74	278	+9	74	145	2		
		(14)		(204)	(+7)		3,271	99		
6	10 22	8868	-37	154	+14	37	6	1	F	Do.
		8861	-20	171	-19	32	194	1		
		8864	-20	171	-11	26	73	7		
		8871	-17	174	+9	18	24	1		
		8863	-15	176	+17	19	61	2		
		8859	-4	187	+18	14	1,261	20		
		8866	+9	200	+17	14	48	3		
		8866	+17	208	+17	21	24	3		
		8858	+17	208	+24	24	242	8		
		8858	+25	216	+22	28	61	6		
		8855	+23	214	-16	32	24	2		
		8855	+32	223	-15	38	194	7		
		8865	+43	234	-25	53	12	3		
		8852	+51	242	-12	55	145	1		
		8852	+54	245	-10	56	61	2		
		8872	+53	244	-14	57	6	1		
		8857	+68	259	-5	70	242	1		
		8857	+78	269	-4	79	194	1		
		8862	+85	276	+10	85	97	2		
		(14)		(191)	(+6)		2,909	72		
7	10 17	8875	-78	100	+17	78	16	1	G	Do.
		8861	-7	171	-18	26	194	1		
		8864	-6	172	-11	18	12	5		
		8871	-3	175	+9	4	24	2		
		8863	-2	176	+17	12	61	1		
		8859	+3	181	+19	14	436	20		
		8859	+8	186	+18	15	97	10		
		8859	+13	191	+18	18	824	14		
		8859	+10	188	+21	17	12	4		
		8866	+21	199	+17	24	24	6		
		8866	+31	209	+17	33	12	2		
		8858	+27	205	+27	34	6	3		
		8858	+30	208	+26	35	242	6		

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1947—Continued

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic Difference in longi- tude	Longi- tude	Latitude	Distance from center of disk	Area of spot or group	Spot count	Plate qual- ity	Observatory
1947 Oct. 7	A m		°	°	°	°				
Oct. 7	10 17	8858	+39	217	+22	41	24	5	G	U. S. Naval.
		8855	+46	224	-14	51	145	10		
		8852	+65	243	-13	68	242	9		
		8852	+69	247	-9	71	12	1		
		8857	+82	260	-4	82	242	1		
		(11)		(178)	(+6)		2,025	101		
8	10 24	8876	-83	82	+20	83	194	1	F	Do.
		8877	-80	85	+9	80	24	1		
		8875	-64	101	+17	64	12	1		
		8874	-63	102	-16	66	24	3		
		8873	-26	139	-15	34	24	4		
		8861	+6	171	-18	25	194	1		
		8864	+7	172	-12	19	24	6		
		8871	+11	176	+8	11	12	2		
		8863	+11	176	+16	15	73	9		
		8859	+18	183	+18	22	436	19		
		8859	+26	191	-21	30	6	1		
		8859	+27	192	-17	29	824	6		
		8858	+43	208	+24	46	121	11		
		8866	+44	209	+16	45	6	1		
		8855	+60	225	-44	63	145	6		
		8852	+78	243	-13	80	242	6		
		(14)		(165)	(+6)		2,361	77		
9	9 51	8879	-76	76	+9	76	267	5	VG	Mt. Wilson.
		8876	-70	82	+19	70	291	1		
		8877	-66	86	+9	66	24	1		
		8875	-51	101	+16	52	12	2		
		8874	-49	103	-16	56	24	1		
		8873	-12	140	-15	24	48	8		
		8873	-7	145	-15	22	61	1		
		8861	+19	171	-18	31	194	1		
		8864	+19	171	-12	26	73	19		
		8863	+24	176	+17	26	48	1		
		8859	+30	182	-19	33	339	22		
		8859	+32	184	+19	35	145	20		
		8859	+40	192	+20	42	727	5		
		8878	+44	196	+11	44	36	6		
		8858	+54	206	+26	56	12	2		
		(*)	+72	224	+32	73	12	1		
		8855	+74	226	-14	76	121	1		
		(14)		(152)	(+6)		2,434	97		
10	14 2	8879	-62	74	+10	62	267	5	F	U. S. Naval.
		8876	-55	81	+20	56	242	1		
		8877	-48	88	+9	48	12	1		
		8874	-34	102	-17	41	12	1		
		8873	+4	140	-15	22	194	6		
		8873	+8	144	-15	23	291	3		
		8861	+33	169	-18	41	194	1		
		8864	+33	169	-12	38	61	4		
		8863	+40	176	+17	41	48	2		
		8859	+45	181	+19	47	145	6		
		8859	+54	190	+17	55	970	7		
		8878	+61	197	+10	61	73	2		
		(10)		(136)	(+6)		2,509	39		
11	12 35	8879	-49	75	+10	49	194	6	F	Do.
		8876	-42	82	+20	44	242	1		
		8877	-35	89	+9	35	12	1		
		8874	-14	110	-21	31	12	2		
		8873	+16	140	-15	26	242	2		
		8873	+21	145	-15	29	242	1		
		8861	+46	170	-18	52	194	1		
		8864	+46	170	-12	49	48	1		
		8863	+52	176	+17	53	24	1		
		8859	+59	183	+19	60	48	6		
		8859	+63	187	+17	63	242	7		
		8859	+69	193	+17	69	630	1		
		8878	+75	199	+10	75	48	1		
		(10)		(124)	(+6)		2,178	31		
12	12 33	8879	-35	76	+10	35	194	7	VG	Mt. Wilson.
		8876	-28	83	+20	31	242	1		
		8874	+1	112	-20	26	24	6		
		8873	+29	140	-15	36	218	1		
		8873	+31	142	-15	37	36	5		
		8873	+34	145	-15	40	206	1		
		8861	+59	170	-18	64	145	1		
		8864	+59	170	-11	62	61	5		
		8863	+65	176	+18	66	24	1		
		8859	+73	184	+22	73	12	1		
		8859	+76	187	+18	76	145	5		
		8859	+82	193	+17	82	703	3		
		(8)		(111)	(+6)		2,010	37		
13	9 35	8879	-22	77	+11	23	194	6	F	U. S. Naval.
		8876	-16	83	+20	21	242	1		
		8880	-2	97	+17	12	73	7		
		8873	+40	139	-16	46	194	1		

See footnotes at end of table.

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1947—Continued

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- fer- ence in longi- tude	Longi- tude	Latitude	Distance from center of disk				
1947 Oct. 13	h m 9 35	8873 8861 8864 (6)	+46 +70 +70 (99)	145 169 169 (+6)	-15 -18 -12 (+6)	51 75 73 (+6)	194 145 48 1,060	1 1 1 18	F	U. S. Naval.
14	10 19	8881 8881 8879 8876 8880 8874 8873 8873 8861 (7)	-80 -69 -8 -3 +12 +27 +54 +59 +86 (86)	6 17 78 83 98 113 140 145 172 (+6)	-23 -22 +11 +20 +17 -19 -16 -15 -19 (+6)	82 74 10 14 16 37 59 63 88 (+6)	145 242 170 242 97 16 242 145 145 1,444	3 7 10 1 12 2 4 1 1 41	F	Do.
15	10 29	8884 8881 8881 8881 (*) 8879 8883 8876 8880 8882 8874 8873 8873 (10)	-87 -63 -62 -57 -2 +6 +7 +10 +26 +27 +34 +67 +73 (72)	345 9 10 15 70 79 82 98 99 106 139 145 (+6)	+19 -24 -26 -22 +14 +12 +20 +17 -24 -16 -11 -16 (+6)	87 69 68 64 8 7 16 28 41 40 71 78 (+6)	291 145 97 194 6 170 12 206 97 12 16 145 194 1,585	1 10 1 2 2 7 3 1 17 6 7 6 3 66	G	Do.
16	15 12	8884 8888 8887 8881 8881 8886 8879 8876 8885 8880 8880 8874 (10)	-71 -67 -48 -48 -43 +1 +21 +26 +37 +41 +47 +47 (56)	345 349 8 8 13 57 77 82 93 97 103 103 (+6)	+19 -11 -7 -24 -22 +12 +12 +20 +7 +17 +16 -16 (+6)	71 70 51 56 51 6 22 29 29 37 42 48 52 (+6)	339 97 97 170 388 24 145 218 12 36 73 48 1,647	1 6 7 12 11 6 4 1 1 4 3 3 59	G	Do.
17	12 42	8884 8888 8881 8881 8881 8887 8886 8879 8876 8885 8880 8880 8874 (10)	-59 -54 -38 -35 -30 -36 +12 +33 +38 +48 +55 +60 +60 (45)	346 351 7 10 15 9 57 78 83 93 100 105 105 (+6)	+19 -11 -27 -24 -23 -7 +14 +12 +20 +7 +17 +15 -17 (+6)	60 56 51 46 42 39 14 33 40 48 56 60 64 (+6)	339 73 218 145 194 61 12 109 218 6 48 109 145 1,677	1 5 14 6 1 6 1 3 1 1 2 4 6 51	G	Do.
18	13 44	8890 8884 8888 8881 8881 8887 8886 8879 8876 8882 8882 8880 8880 8874 8874 8889 (12)	-72 -46 -40 -25 -17 -23 +25 +47 +50 +66 +70 +70 +75 +70 +80 +77 (31)	319 345 351 6 14 8 56 78 81 97 101 101 106 101 111 108 (+6)	-29 +18 -13 -27 -23 -8 +13 +12 +19 -25 -23 +16 +14 -18 -17 +20 (+6)	76 47 44 41 34 26 26 24 51 75 70 75 74 82 77 (+6)	194 364 48 291 558 24 12 97 218 24 12 48 97 145 16 2,196	1 1 4 21 19 2 3 3 1 1 1 3 1 1 5 2 69	G	Do.
19	13 3	8890 8890 8893 8893 8884 8892 8888 8881 8881 8881 8887 8891 8879	-72 -59 -44 -40 -32 -31 -27 -13 -10 -4 -11 +27 +60	306 319 334 338 346 347 351 5 8 14 7 45 78	-30 -30 +12 +10 +18 -4 -13 -29 -27 -25 -9 +15 +11	77 68 44 40 34 33 33 37 35 31 19 28 60	48 218 97 145 339 6 48 97 97 97 24 12 97	2 1 3 3 1 1 4 7 11 7 4 2 2 2	F	Do.

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1947—ContinuedPOSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1947—Continued

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic	Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- ference in longi- tude	Longi- tude	Latitude	Distance from center of disk	
1947 Oct. 19	h m		°	°	°	°	
	13 3	8876	+62	80	+19	62	145
		(10)	(18)	(+6)			1,858
20	9 26	8896	-85	282	-12	85	145
		8896	-80	287	-12	80	291
		8895	-78	289	+20	78	48
		8890	-60	307	-31	66	48
		8890	-47	320	-30	56	194
		8893	-32	335	+12	32	218
		8893	-28	335	+10	29	242
		8894	-30	337	-10	34	6
		8884	-20	347	+18	24	339
		8892	-20	347	-4	23	16
		8888	-15	352	-13	23	24
		8881	+1	8	-28	33	121
		8881	+7	14	-25	31	436
		8887	+3	10	-8	14	24
		8879	+71	75	+9	71	73
		8876	+73	80	+19	74	194
		(12)	(7)	(+5)			2,419
21	9 26	8897	-88	266	-3	88	194
		8896	-71	283	-15	73	776
		8896	-65	289	-12	66	388
		8895	-64	290	+22	65	242
		8890	-48	306	-30	57	48
		8890	-34	320	-30	47	145
		8893	-20	334	+12	21	170
		8893	-14	340	+10	15	194
		8884	-7	347	+18	15	339
		8881	+12	6	-29	36	48
		8881	+20	14	-25	35	412
		(7)	(354)	(+5)			2,956
22	9 25	8897	-72	268	-3	72	145
		8896	-58	282	-15	60	582
		8896	-52	288	-12	54	339
		8895	-50	290	+22	52	145
		8890	-38	302	-30	51	24
		8890	-22	318	-30	41	194
		(*)	-11	329	-25	32	6
		8893	-7	333	+12	10	170
		8893	0	340	+9	4	218
		8884	+6	346	+18	15	291
		8888	+10	350	-13	20	12
		8881	+24	4	-29	41	24
		8881	+32	12	-25	42	388
		(9)	(340)	(+5)			2,538
23	9 27	8902	-85	242	+19	85	48
		8901	-80	247	-10	80	194
		8897	-59	268	-3	60	267
		8900	-49	278	+16	50	16
		8896	-50	277	-15	53	170
		8896	-48	279	-17	52	73
		8896	-45	282	-14	49	388
		8896	-37	290	-13	42	242
		8895	-37	290	+22	40	145
		8890	-24	303	-30	42	24
		8890	-13	314	-29	36	12
		8890	-10	317	-30	36	170
		8899	-10	317	+21	19	97
		8898	-10	317	+13	13	24
		8893	+6	333	+12	8	145
		8893	+14	341	+9	15	218
		8884	+19	346	+18	24	267
		8881	+40	7	-26	50	73
		8881	+45	12	-25	52	388
		(*)	+73	40	+6	73	24
		(13)	(327)	(+5)			2,985
24	10 41	8903	-77	236	-18	78	194
		8902	-75	238	+19	76	97
		8902	-70	243	+21	71	48
		8901	-73	240	-11	74	24
		8901	-66	247	-9	67	194
		8897	-51	262	-1	52	24
		8897	-46	267	-2	47	242
		8900	-35	278	+16	36	6
		8896	-33	280	-15	38	339
		8896	-23	290	-14	29	291
		8895	-23	290	+21	27	97
		8890	-9	304	-30	36	12
		8890	-4	309	-30	35	12
		8890	+2	315	-30	35	170
		8899	+3	316	+21	15	339
		8898	+4	317	+12	7	218
		8893	+20	333	+11	21	145
		8893	+28	341	+9	29	291
		8884	+32	345	+17	34	291
		8881	+59	12	-26	63	388
		(13)	(313)	(+5)			33,422

See footnotes at end of table.

769774-48-2

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate qual- ity	Observatory	
			Dif- fer- ence in longi- tude	Longi- tude	Latitude	Distance from center of disk					
1947 Oct. 25	h m 10 0	8907 8903 8901 8901 8902 8897 8897 8900 8896 8896 8896 8899 8899 8898 8893 8893 8905 8884 8904 8881	-75 -64 -60 -53 -59 -39 -32 -23 -23 -15 -8 -8 +13 +16 +17 +34 +41 +40 +45 +72 +73	226 237 241 248 242 262 269 278 278 286 293 314 317 318 335 342 341 346 15 14	-14 -18 -11 -10 +21 -2 -2 +18 -15 -13 -14 -29 +21 +11 +11 +9 -14 +17 -17 -25	77 68 62 55 60 40 33 26 30 24 22 17 23 18 35 41 44 46 73 76	194 194 36 242 145 48 2 16 194 145 170 61 145 388 388 73 291 24 291 12 242	1 1 1 1 10 4 2 3 1 19 1 7 9 5 10 14 4 4 1 1 6	F	U. S. Naval.	
		(16)	(301)	(+5)		3,541	105				
26	9 30	8907 8903 8901 8901 8902 8897 8897 8896 8896 8896 8899 8899 8898 8898 8893 8893 8905 8884	-62 -51 -46 -40 -46 -28 -19 -11 -2 +6 +5 +27 +27 +32 +29 +34 +48 +55 +53 +58	226 237 242 248 242 260 269 277 286 294 293 315 315 320 317 322 336 343 341 346	-14 -18 -12 -10 +22 -2 -2 -15 -13 -14 +20 -29 +21 +21 +12 +12 +12 +10 -14 +17	65 55 48 43 48 29 21 22 18 20 16 43 31 35 30 145 297 48 55 56 59	170 194 24 242 97 24 218 170 97 158 48 121 194 206 145 297 48 242 73 242	1 1 13 3 25 3 3 6 32 3 14 15 6 8 16 2 17 5 11 1	VG	Mt. Wilson.	
		(13)	(288)	(+5)		2,980	185				
27	11 45	8908 8907 8903 8902 8901 8897 8897 8896 8896 8896 8899 8899 8895 8895 8899 8899 8890 8898 8898 8905 8893 8884	-83 -48 -37 -36 -26 -5 -4 +4 +7 +15 +19 +22 +20 +39 +46 +40 +42 +48 +67 +71 +72	190 225 236 237 247 268 269 277 280 288 292 295 293 312 319 313 315 321 340 344 345	+19 -14 -18 +22 -10 -1 -3 -15 -14 -15 -13 +19 -21 -21 -29 +13 +13 +13 -13 +10 +17	83 82 44 38 30 6 8 20 21 24 25 28 24 41 48 52 42 49 60 71 72	194 170 170 24 242 12 218 109 109 121 109 194 206 48 109 291 48 170 242	2 1 1 3 1 1 4 1 4 7 6 1 6 1 1 2 2 2 1 1	F	U. S. Naval.	
		(14)	(273)	(+5)		2,773	56				
28	12 16	8909 8908 8907 8903 8901 8901 (*) 8897 8897 8897 (*) 8896 8896 8896 8895 8899 8899 8890 8898 8898 8884 8884 8905 8893	-80 -69 -34 -23 -18 -12 -7 +3 +9 +10 +13 +17 +29 +35 +33 +53 +59 +54 +55 +62 +72 +86 +80 +85	180 191 225 237 242 248 253 263 269 270 273 277 289 295 293 313 319 314 315 322 332 346 340 345	-9 +19 -14 -18 -14 -11 -3 -4 -2 -2 +24 -15 -15 +19 +20 +20 -29 +12 +12 +17 +17 -16 +9	80 69 39 32 26 21 11 11 11 12 26 36 40 35 55 60 61 55 62 72 86 81 85	388 194 121 97 24 206 24 16 6 242 6 73 48 73 145 194 24 73 242 24 242 73 145	1 2 1 1 2 1 3 4 1 1 1 3 4 4 1 1 6 9 1 1 1 4 4	F	Do.	
		(61)	(200)	(+5)		2,704	58				

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1947—Continued

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- ference in longi- tude	Lon- gi- tude	Lat- tude	Dis- tance from cen- ter of disk				
1947 Oct. 29	A m 10 34	8909	-68	180	-9	69	436	1	F	U. S. Naval.
		8906	-57	191	+19	58	242	2		
		8907	-22	226	-15	29	109	3		
		8903	-11	237	-18	25	97	1		
		8901	0	248	-11	16	194	1		
		8910	+1	249	+20	15	24	6		
		8897	+22	270	-2	23	206	2		
		8896	+29	277	-16	36	73	1		
		8896	+41	289	-17	46	24	6		
		8896	+47	295	-16	52	145	10		
		(*)	+31	279	-11	35	12	3		
		8899	+65	313	+20	66	97	1		
		8899	+71	319	+19	71	194	1		
		8896	+74	322	+12	74	206	1		
		(11)		(248)	(+5)		2,050	30		
30	10 27	8909	-55	179	-8	57	291	1	F	Do.
		8908	-43	191	+19	45	145	2		
		(*)	-14	220	+10	15	12	1		
		8907	-9	225	-16	22	73	1		
		8903	+2	236	-19	25	97	1		
		8901	+13	247	-11	21	194	1		
		8910	+15	249	+19	22	48	1		
		8897	+35	269	-2	36	145	2		
		8896	+42	276	-18	48	73	1		
		8896	+45	279	-12	48	6	1		
		8896	+60	294	-13	62	170	4		
		8899	+81	315	+18	81	194	2		
		8896	+87	321	+12	87	194	1		
		(11)		(234)	(+5)		1,642	19		
31	10 56	(*)	-75	146	+27	77	12	1	VG	Mt. Wilson.
		8909	-47	174	-9	50	48	21		
		8909	-40	181	-9	43	436	7		
		8908	-29	192	+19	32	218	10		
		(*)	-22	199	+11	23	12	12		
		(*)	0	221	+13	9	6	2		
		8907	+5	226	-16	21	85	1		
		(*)	+7	228	+10	10	12	6		
		8903	+16	237	-18	28	73	1		
		8901	+26	247	-10	30	194	1		
		8910	+28	249	+19	31	73	21		

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
OCTOBER 1947—Continued

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic				Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- ference in longi- tude	Lon- gi- tude	Lat- tude	Dis- tance from cen- ter of disk				
1947 Oct. 31	A m 10 56	8897	+49	270	-3	50	104	9	VG	Mt. Wilson.
		8896	+55	276	-17	59	61	1		
		8896	+74	295	-16	76	194	2		
		(12)		(221)	(+4)		1,618	95		

Mean daily area for 31 days=2,517.

Mean 10 g+s for 31 days=201.6.

*Not numbered.

VG=very good; G=good; F=fair; P=poor.

PROVISIONAL RELATIVE SUNSPOT NUMBERS FOR
OCTOBER 1947

[Dependent on observations at Zurich Observatory and its stations at Locarno and Arosa.]

October 1947	Relative numbers	October 1947	Relative numbers	October 1947	Relative numbers
1.....	235	11.....	132	21.....	149
2.....	242	12.....	125	22.....	170
3.....	273	13.....	93	23.....	191
4.....	304	14.....	111	24.....	228
5.....	262	15.....	129	25.....	237
6.....	275	16.....	112	26.....	239
7.....	227	17.....	121	27.....	204
8.....	235	18.....	136	28.....	182
9.....	222	19.....	147	29.....	129
10.....	160	20.....	129	30.....	120
				31.....	111

Mean, 31 days=181

FIG. 1. Isotherms (7-10) for 1947 from the H. W. B. and Wind Forecast Sub-Station, October 1947

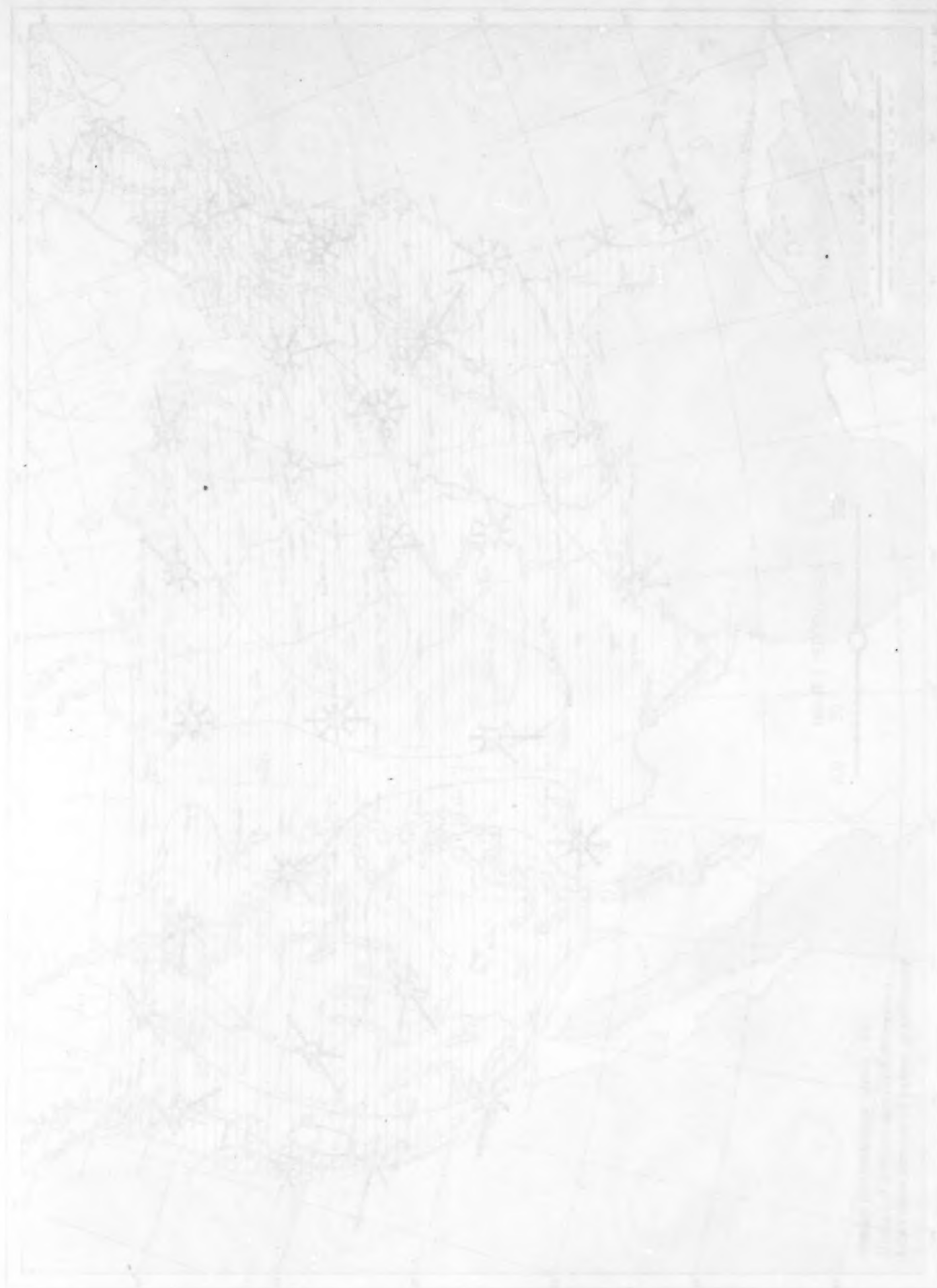


Chart I. Departure (°F.) of the Mean Temperature from the Normal, and Wind Roses for Selected Stations, October 1947

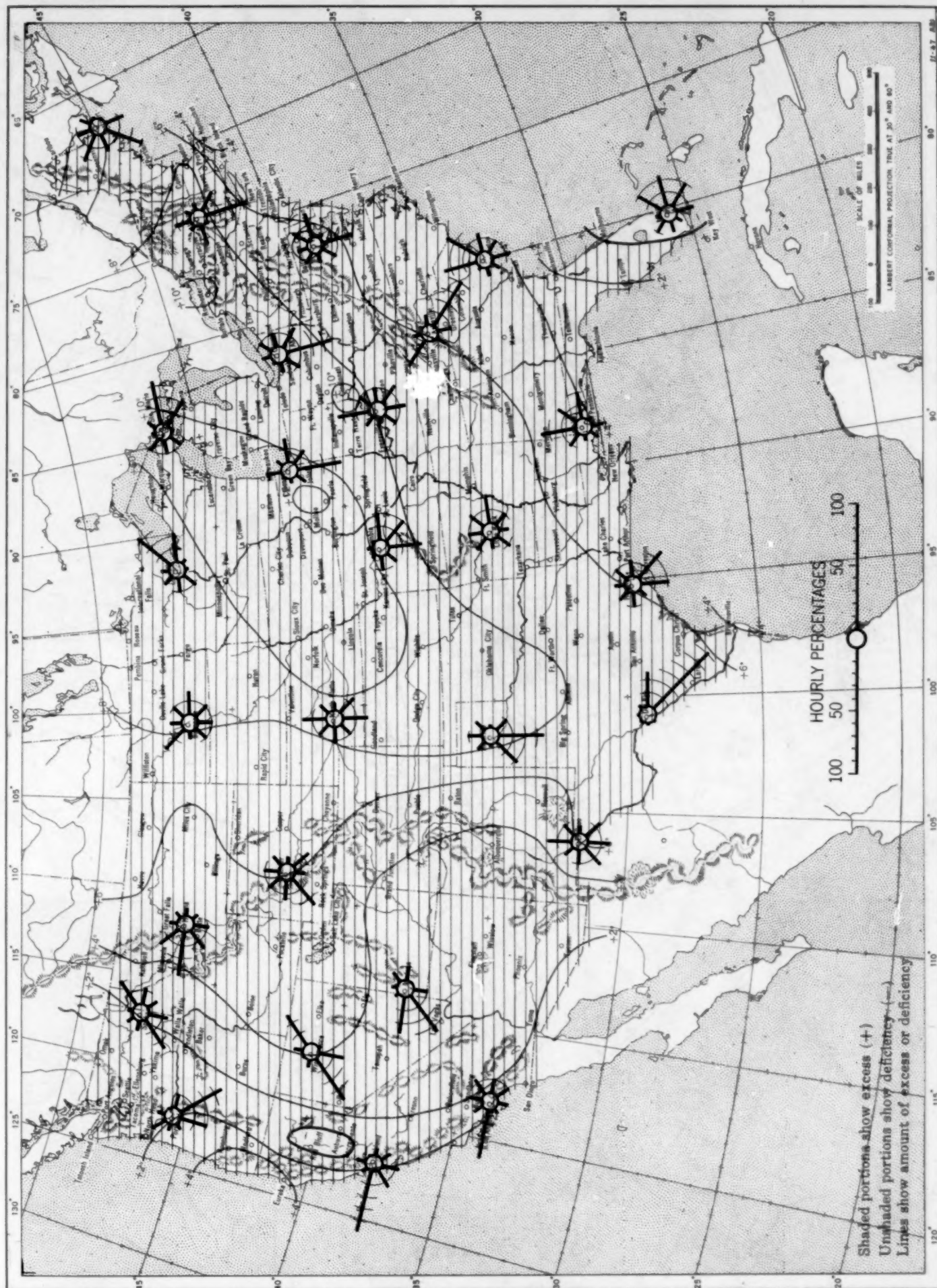
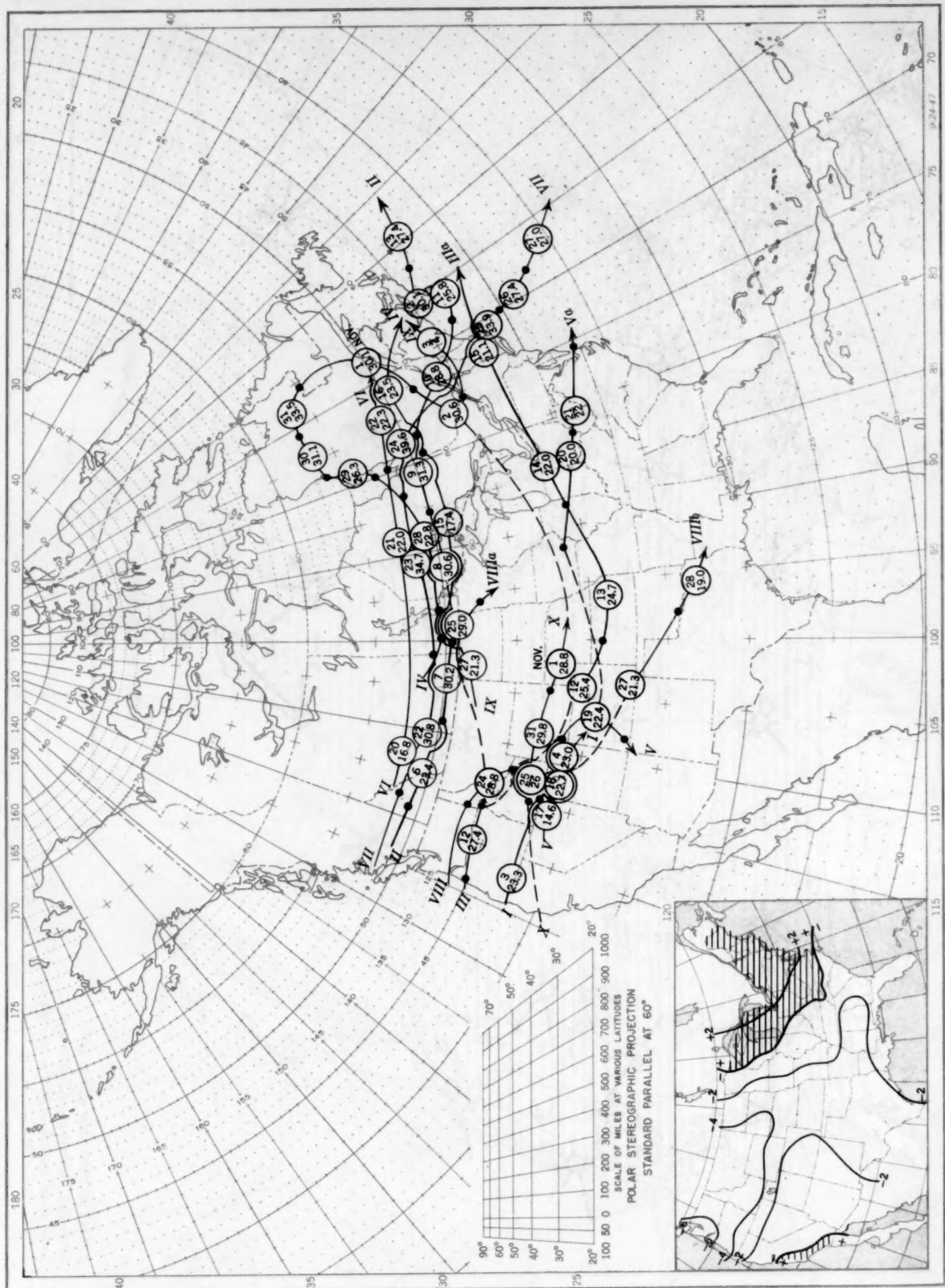
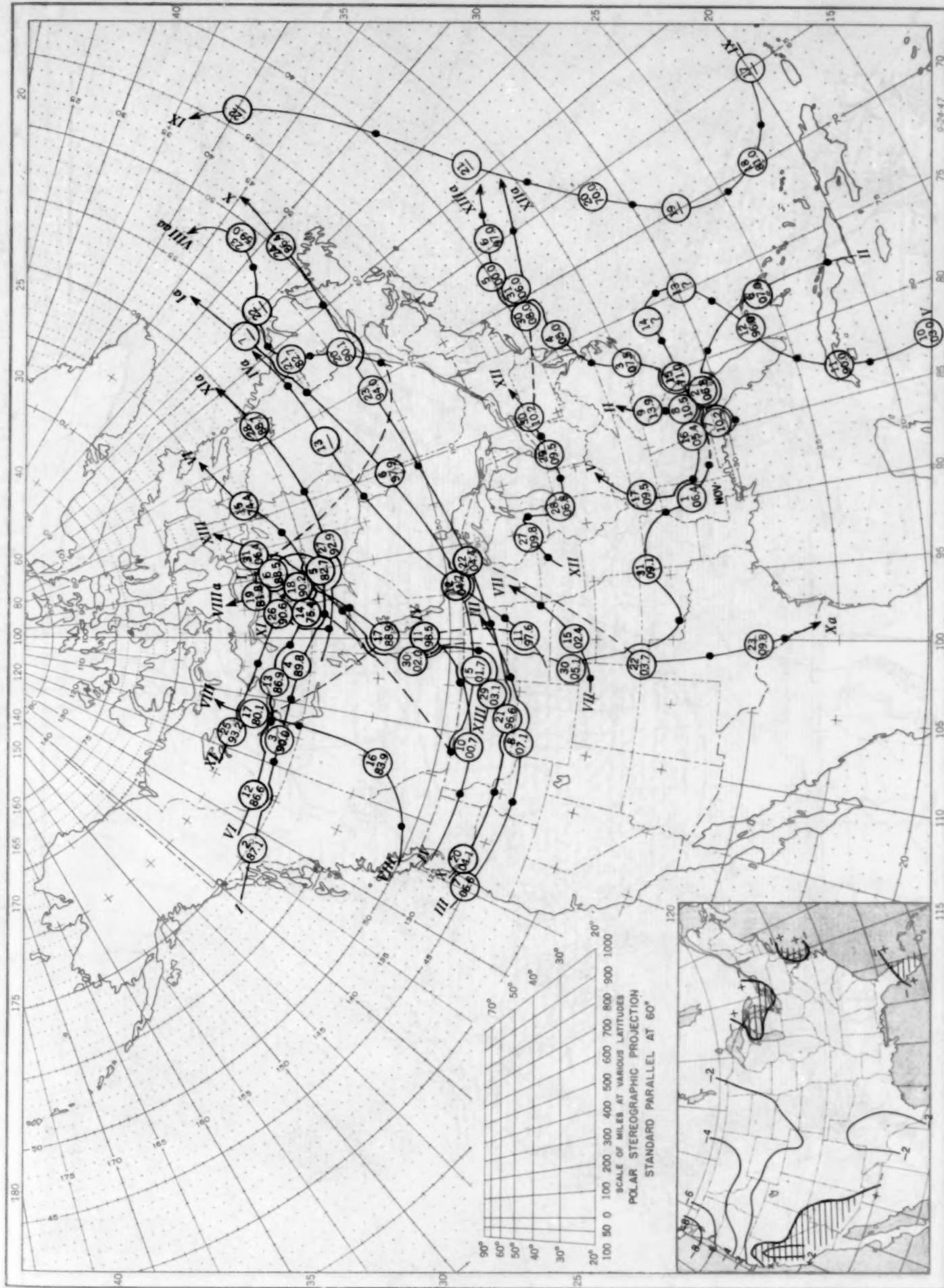


Chart II. Tracks of Centers of Anticyclones, October 1947. (Inset) August Departure of Monthly Mean Pressure from Normal



Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of anticyclone at 7:30 p. m. (75th meridian time)

Chart III. Tracks of Centers of Cyclones, October 1947. (Inset) Change in Mean Pressure from Preceding Month.



Circle indicates position of cyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of cyclone at 7:30 p. m. (75th meridian time)

Chart IV. Percentage of Clear Sky Between Sunrise and Sunset, October 1947

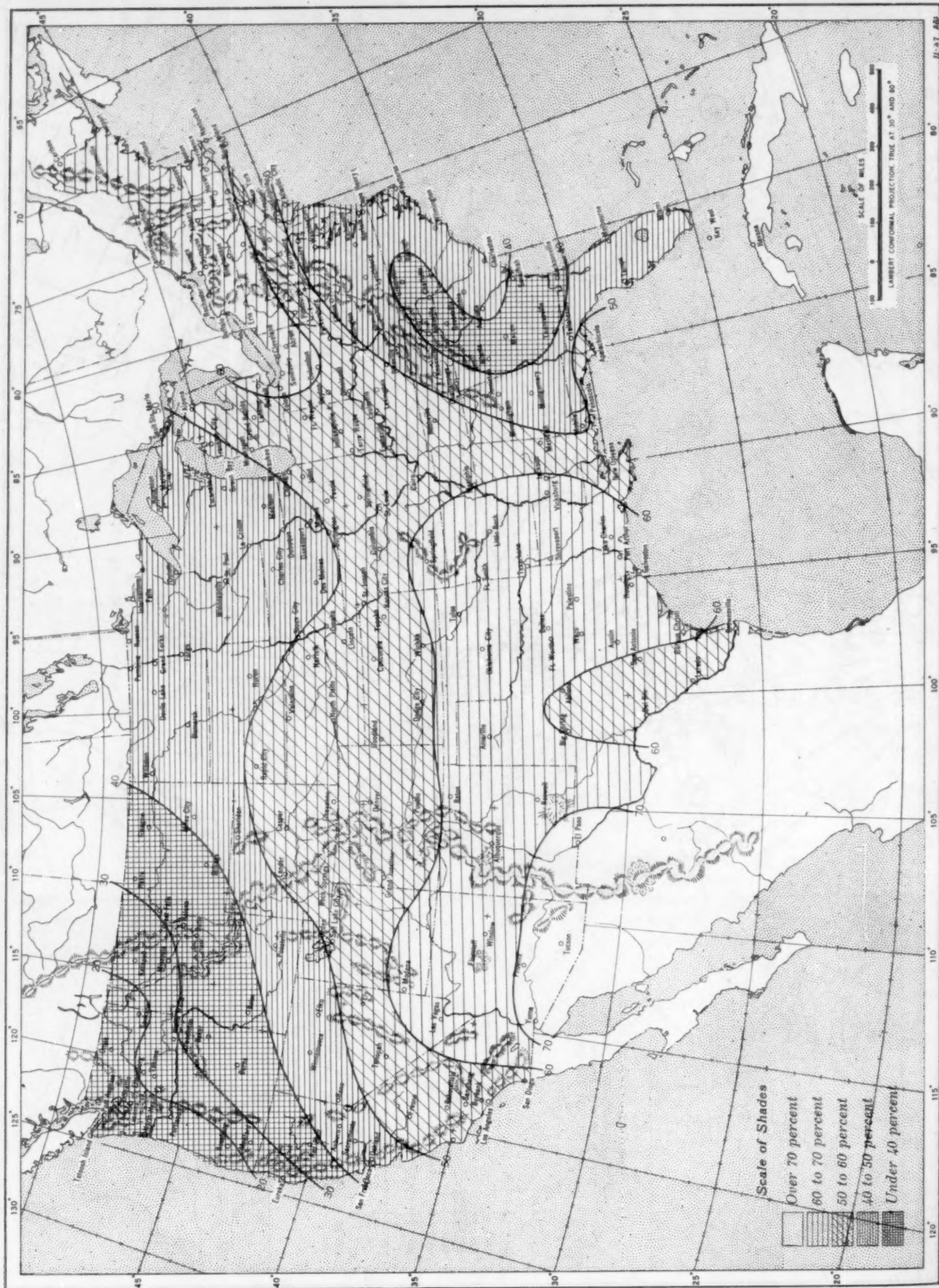


Chart V. Total Precipitation, Inches, October 1947. (Inset) Departure of Precipitation from Normal

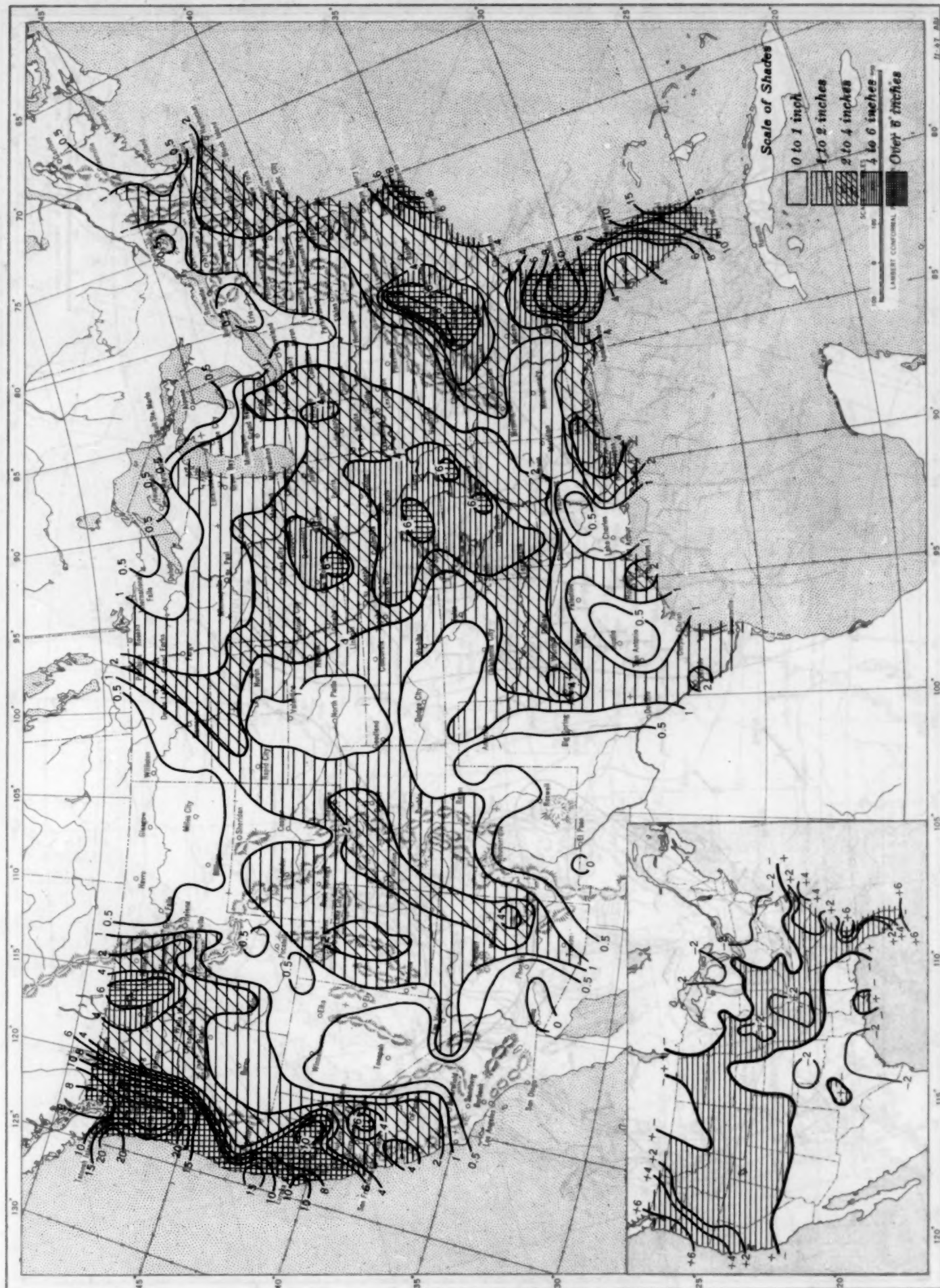


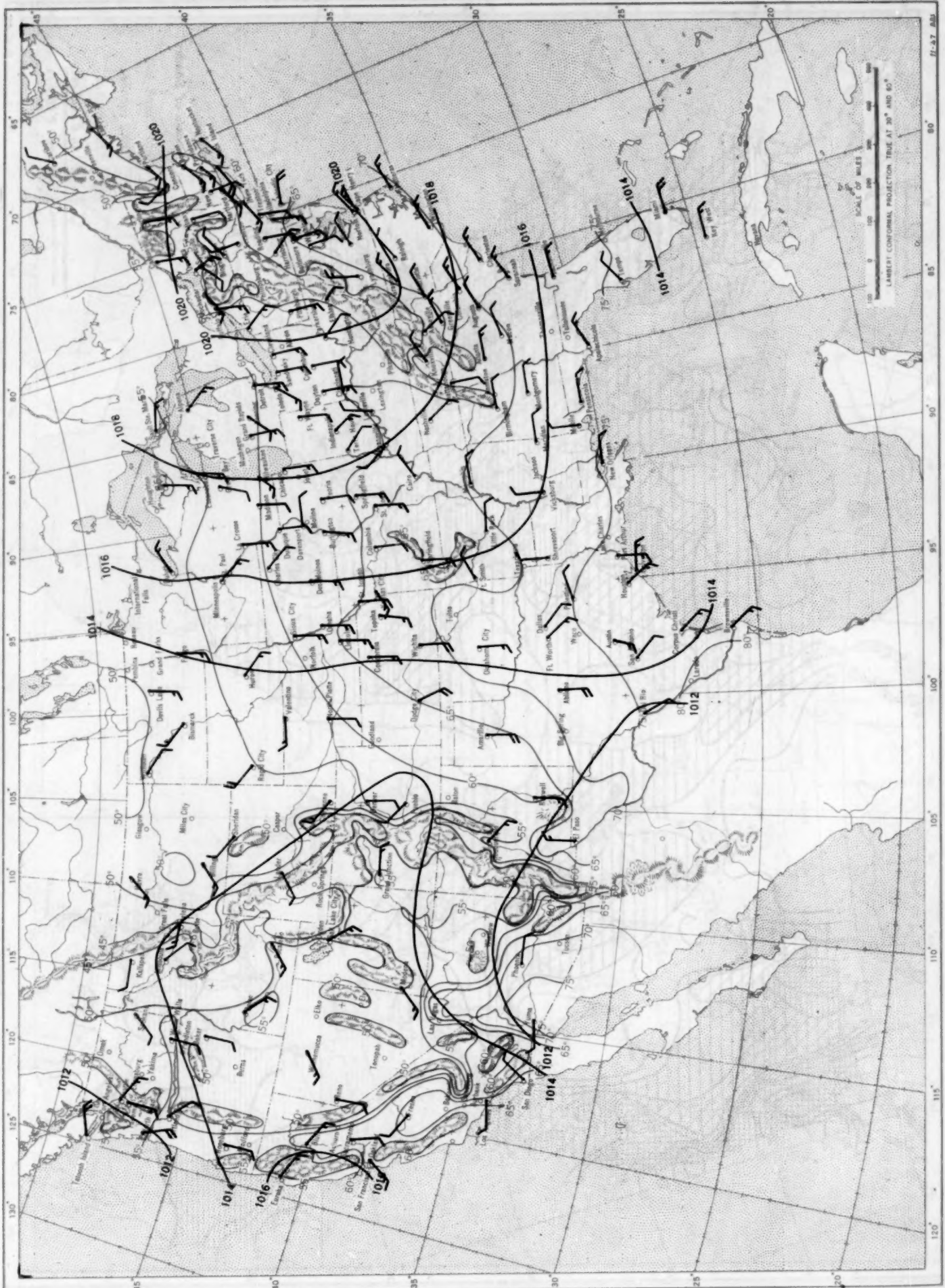
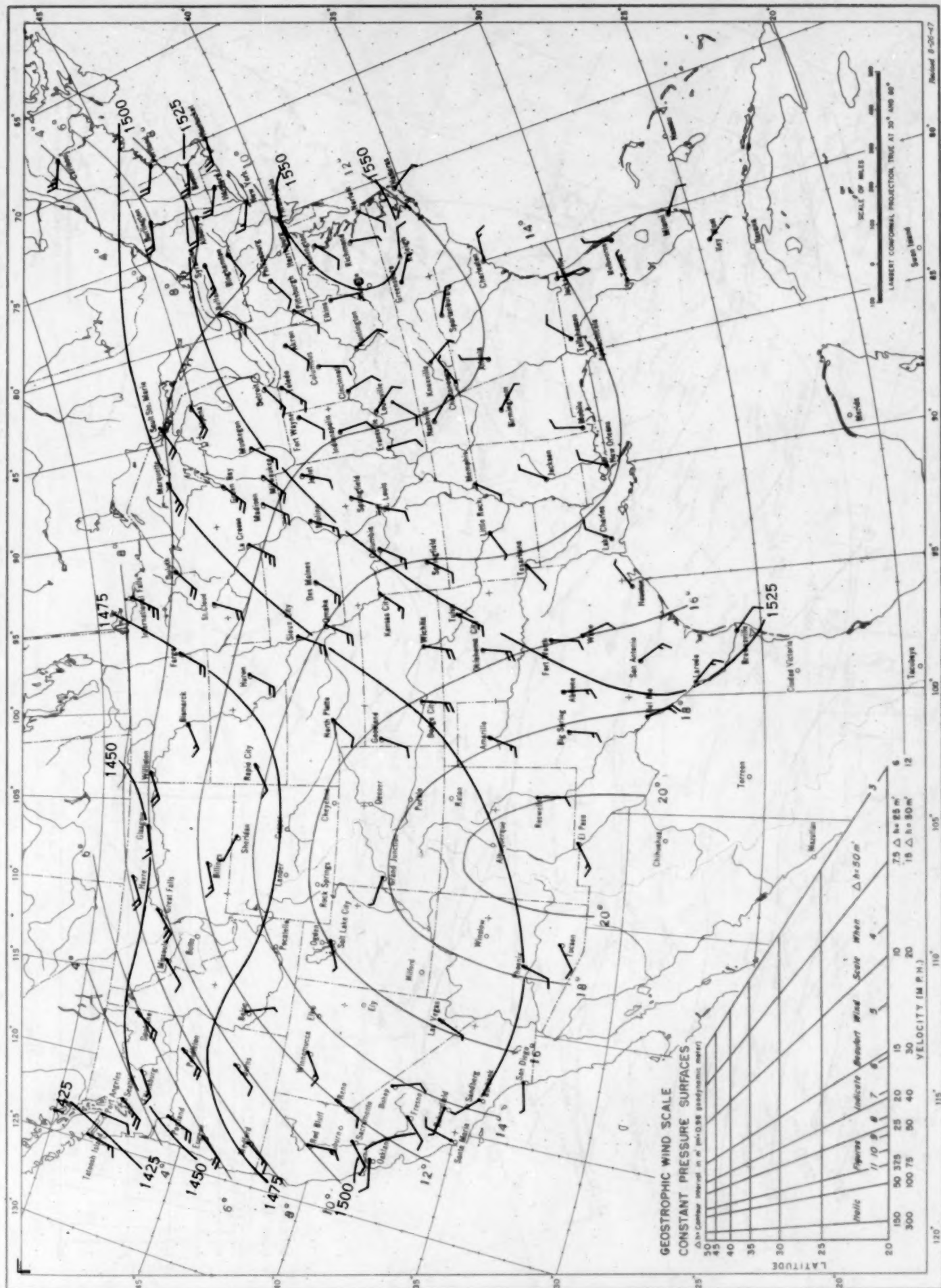
Chart VI. Isobars (mb.), at Sea Level and Isotherms ($^{\circ}$ F.) at Surface; Prevailing Winds, October 1947

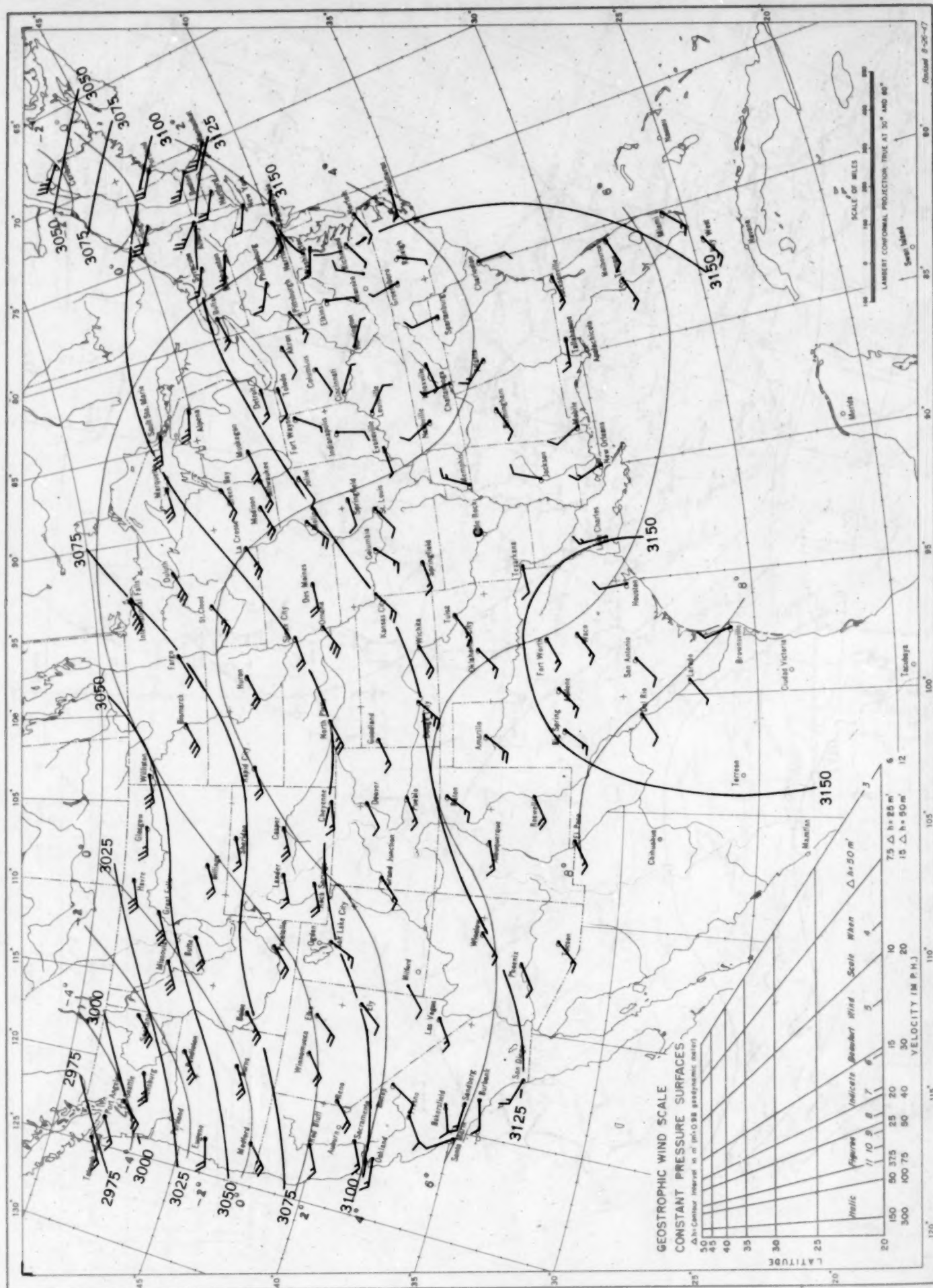
Chart VIII, October 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 850-millibar Pressure Surface and Resultant Winds at 1,500 Meters (m.s.l.)

Chart VIII, October 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 850-millibar Pressure Surface, and Resultant Winds at 1,500 Meters (m.s.l.)



Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

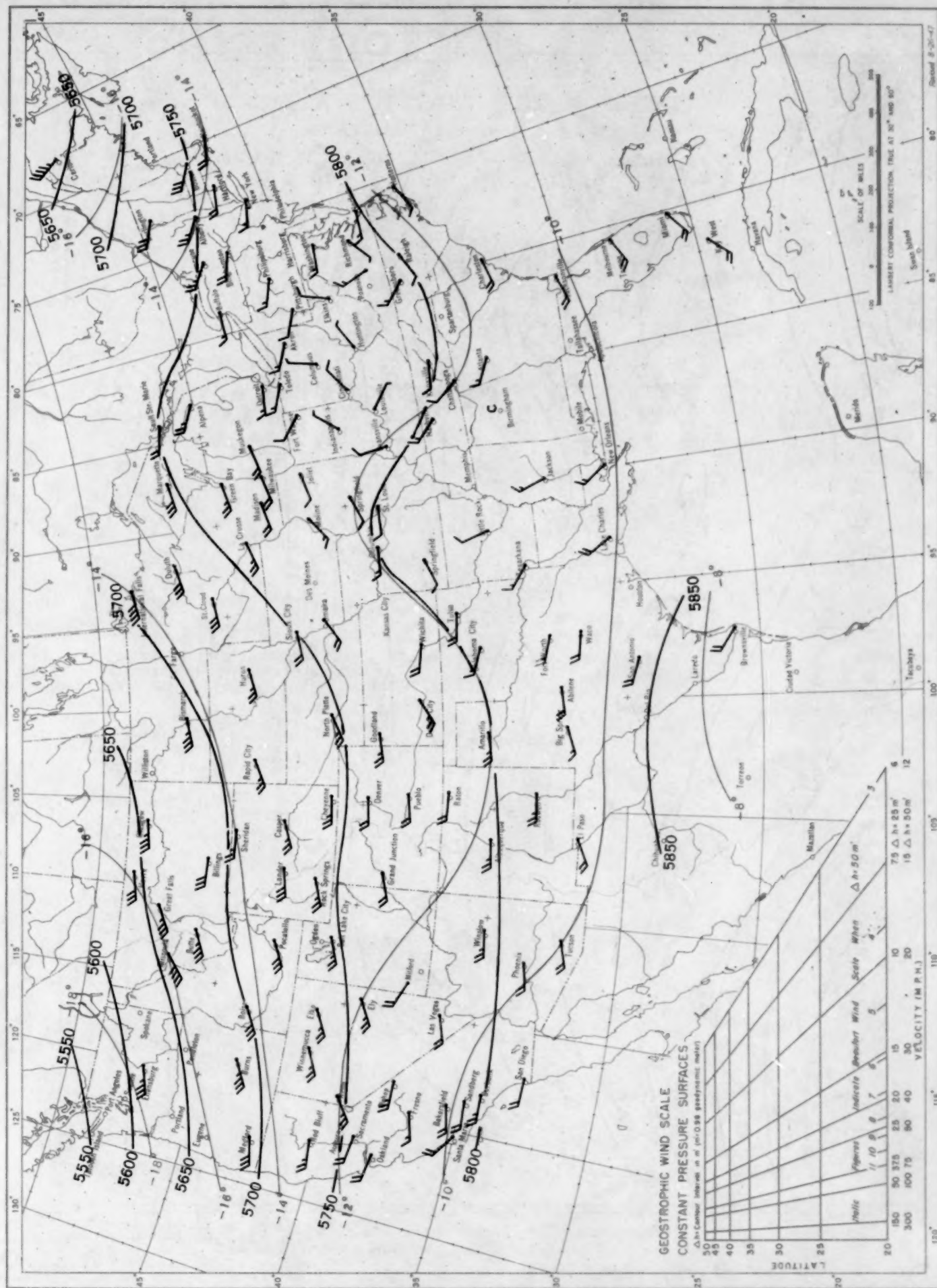
Chart IX, October 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 700-millibar Pressure Surface, and Resultant Winds at 3,000 Meters (m.s.l.)



Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

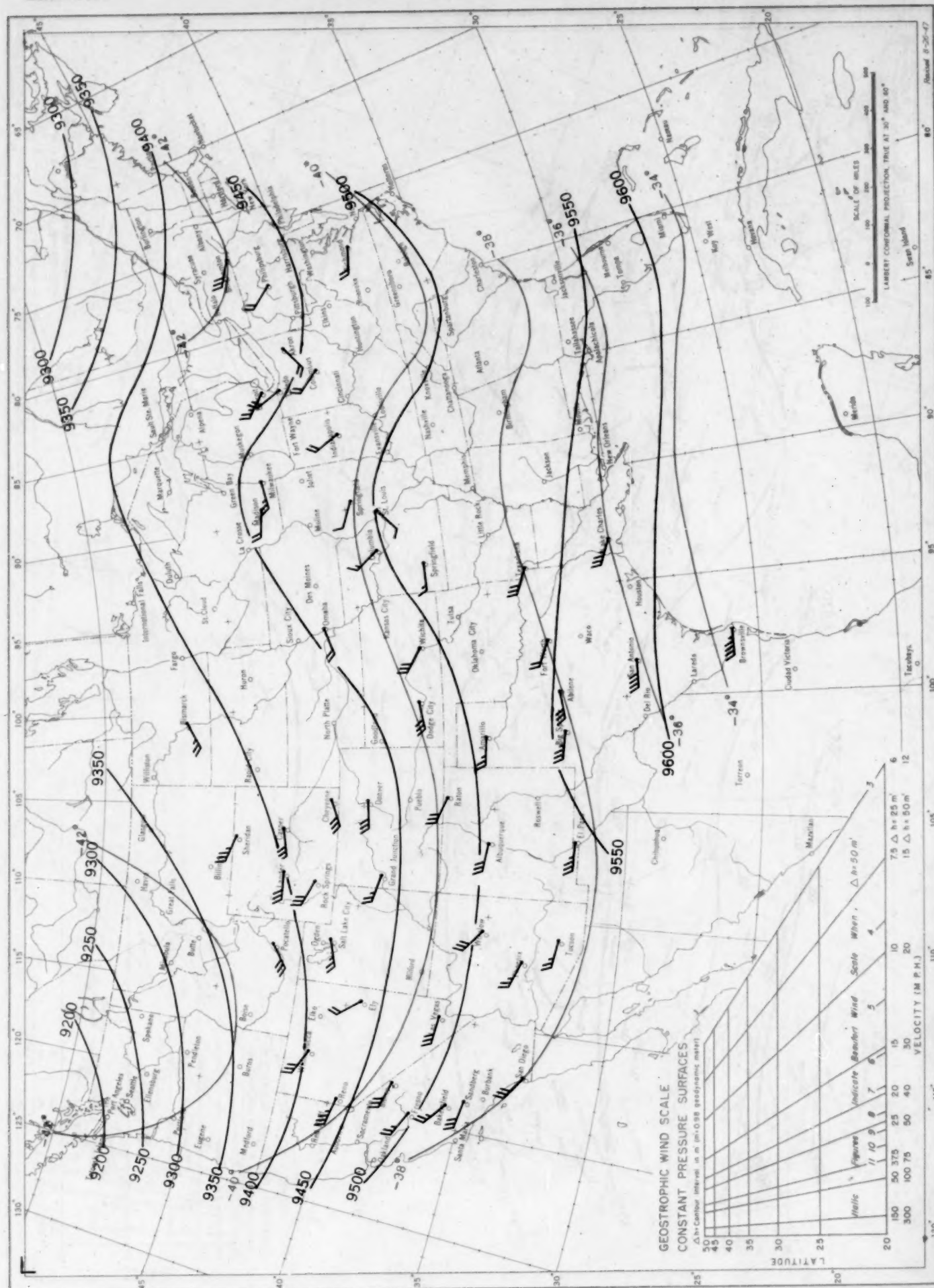
Chart X, October 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in

Chart X, October 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 500-millibar Pressure Surface, and Resultant Winds at 5,000 Meters (m.s.l.)



Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

Chart XI, October 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 300-millibar Pressure Surface, and Resultant Winds at 10,000 Meters (m.s.l.)



Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.